SEPTEMBER, 1963 • 50¢

AMERICAN Cinematographer

Magazine Of Motion Picture Photography And Production Techniques

CAMERAS FOLLOW THE HORSES

How movies make harse racing safe far the bettar

FILMING INDIAN CEREMONIALS

Tact nets rare films af ancient ceremoniol rites

NEW LIFE FOR OLD COMMERCIALS

Updating ald TV spots with new footage

AERIAL IMAGE TECHNIQUES

Shartcut to snappy visual effects

A VARIABLE BEAM QUARTZ LAMP

ColarTran's newest QI lamp for set lighting

PANAVISION'S NEW LENSES AND CAMERA EQUIPMENT

Plus • INDUSTRY NEWS • BEHIND THE CAMERAS • QUESTIONS & ANSWERS • WHAT'S NEW

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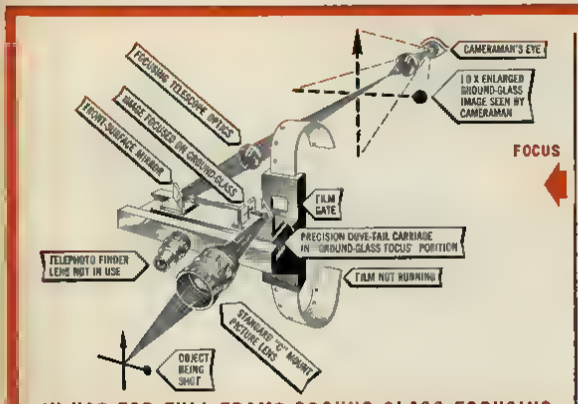
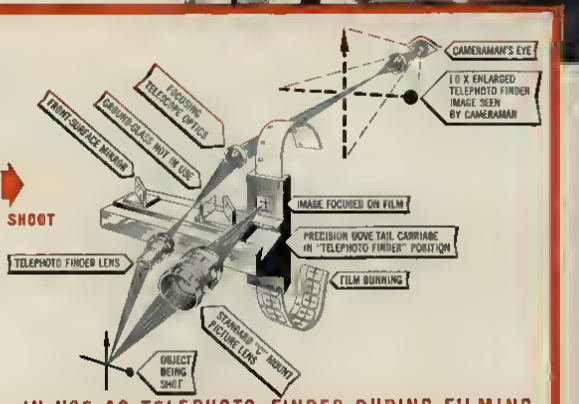

CAMERAMAN'S EYE
10 X ENLARGED GROUND-GLASS IMAGE SEEN BY CAMERAMAN
FOCUSING TELESCOPIC OPTICS
IMAGE FOCUSED ON GROUND-GLASS
FRONT-SURFACE MIRROR
FILM GATE
PRECISION DOVE-TAIL CARRIAGE IN "GROUND-GLASS FOCUS" POSITION
TELEPHOTO FINDER LENS NOT IN USE
FILM NOT RUNNING
STANDARD "C" MOUNT PICTURE LENS
OBJECT BEING SHOT

IN USE FOR FULL-FRAME GROUND-GLASS FOCUSING

"Super 1200" Reflex Ground-Glass Focusing-Frame indicates the tinid covered by any focal-length lees at all distances. A 10X enlnrgnd Cround-Glass image is seen by the Cameramae, for needle-sharp critical focusing

FOCUS

SHOOT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TELEPHOTO FINDER LENS
FILM RUNNING
STANDARD "C" MOUNT PICTURE LENS
OBJECT BEING SHOT

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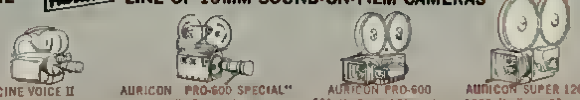

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Cinematographer

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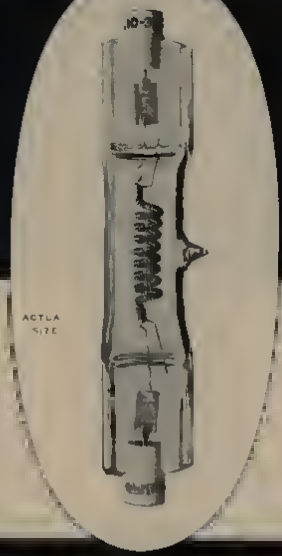

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INDUSTRY NEWS

News briefs of industry activities, products and progress

Lin Dunn Winds Up "Mad World" Effects

The most extensive photographic special effects production job in the history of 70mm film has been completed for 'It's a Mad, Mad, Mad Mad World,' according to Linwood G. Dunn, ASC president of Film Effects of Hollywood.

The Stanley Kramer blockbuster—utilizing Cinerama's new single projector system—will hold its world premiere, November 7, at the new Cinerama Theater in Hollywood.

In all, it took Film Effects of Hollywood 15 months to complete special effects production which encompassed the use of animation, miniatures, matte paintings, optical printing, travelling mattes, high speed photography and various other special techniques.

Dunn, who personally supervised his company's work on the comedy photographed in Ultra Panavision and color, devised many special techniques for meeting the unique requirements of the United Artists' release. Along with his chief cinematographer, James Gordon, ASC, he developed some highly specialized photographic equipment, used for the first time in a 70mm feature production.

Among the equipment and facilities designed and constructed by Film Effects for "It's a Mad, Mad, Mad, Mad World" was a 12,500 square foot shooting stage equipped to function as a complete creative special effects production center; a highly complex combination camera-contact printer-enlarger-projector; and, a special multipurpose optical printer.

Dunn, who for many years was a Director of Photography and Head of the Special Effects Department at RKO Studios, said that in his experience, this was the first wide screen film to utilize such a vast variety and scope of special effects.

Irving Ries Passes

Irving Ries, veteran cinematographer and a retired member of the American Society of Cinematographers died at his home in Santa Monica, August 20th. Following an active career as cameraman during the heyday of the "silents," Ries subsequently opened a photo supply shop in Hollywood specializing in the rental of motion picture cameras and equipment. In this he is best remembered by embryo film makers hoping to break into professional cinematography, to whom Ries often rented a complete outfit of 35mm camera equipment and lenses for as little as $5.00 a day without any cash deposit.

More recently Ries designed a revolutionary new type baby tripod and had engaged in light manufacturing of other motion picture equipment.

•

Animated Film Activity In Upturn in Hollywood

A sharp increase in Hollywood animated film production activity during the next few months is predicted by *Daily Variety*, Hollywood film industry trade paper, following a recent survey of the animation studios.

According to *Variety*, sparking the resurgence is deal disclosed last month

Continued on Page 506

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INDUSTRY NEWS

Continued from Page 504

which will put MGM back in the cartoon field for the first time since it shuttered its shorts department in 1957 Walter Bien, it was learned, has been signed to produce top budgeted "Tom and Jerry" shorts on a one a-month basis. As an indie producer, Bien will produce films off the Metro lot, with the studio financing and distributing

Bien, heretofore active only in commercial and industrial film fields, has set director Chuck Jones, long associated with Warners cartoon production before studio closed its shorts department in January, to helm films. Jones will bring bulk of crew he has worked with in past which will include writer Mike Maltese

Productions will be in "full animation" as opposed to the "limited animation" common to tv. Illustrating difference, Jones declares that average weekly output for the "limited" animator is equal to from 150 to 200 feet of completed film whereas in "full" animation artist usually accounts for no more than 30 feet

Foreign income derived from animated shorts has long gone largely unnoticed, according to Cartoonists rep Kilty. He asserts that recent reappraisal by Warners of this factor has sparked recurrent rumors that studio is also prepping a return to cartoon production

•

Movietone Heods For Featurette News Format

The Movietone News division of 20th Century Fox, both domestic and foreign, is to undergo change in format. Latter will have emphasis on topical featurettes instead of spot news At same time Movietone will step up its overseas newsreel activities The company supplies newsreel coverage for theatrical distribution

United Press International, incidentally which for 12 years has had an arrangement with Movietone whereby the latter provided newsfilm for TV. will go into production and syndication on its own October 1st.

•

Aid To Projectionists

Formation of an engineering committee to disseminate information on new developments in motion-picture projection was announced recently by I. A. International Vice President George Flaherty, who is also president of Studio Projectionists' Local 165 Chairman of the committee is Don Kloepfel, projection supervisor for General Film Laboratories. The committee will work to familiarize projectionists with new equipment and developments, to standardize projection rooms and upgrade projection quality, and to provide employers with current information on the selection and use of equipment.

•

Charles Rosher Revisits Hollywood

Charles E. Rosher who achieved the dream of most Hollywood cinematographers a few years ago by retiring to a tropical hideaway in Jamaica, revisited Hollywood last month. One of the founders of the American Society of Cinematographers, Rosher

Charles Rosher, ASC

was for many years one of M-G-M's top directors of photography A two-time Academy Award winner — for "Sunrise" (1928) and "The Yearling" (1946) — he also earned numerous Academy Award nominations for his cinematography

While in Hollywood, he conferred with Sol Lesser, President of the Hollywood Motion Picture and TV Museum, regarding subject material planned for exhibition there when the Museum is completed next year.

•

TRADE NOTES: *Jack Pill* has launched his own camera equipment business in Hollywood, at 6510 Santa Monica Blvd. . . *Walter Druker*, formerly with Camera Service Center, has joined Camera Mart's rental and sales department Calvin Productions, Inc., Kansas City, Mo announces formation of *Calvin De Frenes Corporation* in Philadelphia, Company will offer Calvin-type services to east coast film makers . . *William P Howard* has been named sales manager of Movielab, Inc. . . *Florman & Babb* has opened branch in Montreal, Canada, at 1263 Dorchester St., West Manager is *Kenneth Jones* *Louis W. Jennis* has been appointed marketing manager for Ansco's Motion Picture and industrial products . . . *Triad Corp.*, Encino, has re-established its east coast office at 3702 Munsie St., Wheaton, Maryland *Vince Koenig* manages •

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- On Film, Inc
- Filmax, Inc
- W C D, Inc
- Elektra Film Productions, Inc
- Pintoff Productions, Inc
- Sarra, Inc

MITCHELL B N C

- Homer Productions ("Diary of a Bachelor")
- Peckham Productions, Inc
- On Film, Inc
- Gerald Productions, Inc
- Henkin Productions, Inc
- Rose Magwood Productions, Inc
- Peter Elgar Productions
- Pelican Productions, Inc
- Wolper Productions
- Televideo Productions, Inc
- Vision Associates, Inc
- T V Graphics, Inc
- Logeare Productions
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- Dolphin Productions, Inc
- Herbert Kerkow, Inc

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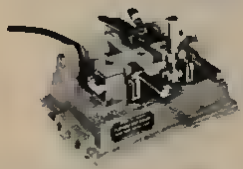

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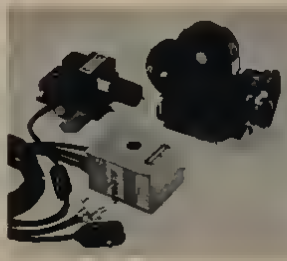
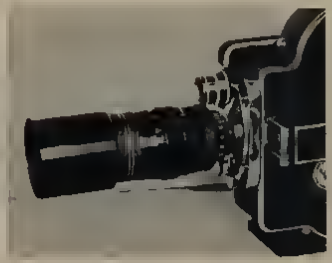


Arri Single-frame Motor

A new improved single-frame motor for all Arriflex-16 cameras is announced by Arriflex Corp. of America, 257 Park Ave. South, New York 10 N. Y. Motor operates in either single or double pulse modes. In single pulse, one complete frame cycle is completed in exposure times of either 1/4 or 1/2 second. In double pulse, the first pulse opens shutter and the second closes it, permitting exposures of 1-second or longer.

Motor has built-in 8-volt DC power supply programmed to control automatically the 400' magazine film advance and operation of capping shutter. Also included are strobe synchronization, switches for forward and reverse operation and single-frame/continuous operation, frame counter and indicator light.



Hi-speed Tele Lens

A new high-speed 150mm f/2.2 telephoto lens for 16mm cameras is announced by Century Precision Optics, 10657 Burbank Blvd., North Hollywood, Calif. Made from a new type optical glass, the lens features high resolving power and contrast and has been designed especially for telephoto shots under adverse lighting conditions. It is available in C mount for Bolex, Bell & Howell, Auricon and similar cameras, and is also available in other mounts on special order. List price is $199.50.

Portable Thermal Unit

An automatic thermostatically controlled Portable Thermal Unit is announced by Frigidheat Industries, 1401 Twenty first Avenue So., Nashville, Tenn. Specific use is for film labs and photo darkrooms for maintaining and controlling temperature of developers, fixers, or water. Unit cools or heats as set and is not affected by ambient temperature changes. Simple to operate, it is only necessary to plug into power source and set timer. Literature is available.

120mm Zoom Lens

A new 120mm Angenieux zoom lens for Bolex H-16 cameras is announced by Paillard, Inc. Available with or without reflex viewfinder, lens has zooming range from 12mm to 120mm. For making fast zooms, a short, one-inch handle is provided; a gear and crank mechanism makes slow zooms possible. Maximum lens opening is f/22 over entire zoom range; focusing is from 5' to infinity. It accepts Series IX filters and close up lenses. The viewfinder model is mounted with aid of C-mount adapter, for turret cameras, a locking plug is provided that fits into the lower turret position. Paillard, Inc., Box 564, Linden, N.J.

HFC Repair Splicers

Splicers for repairing 35mm, 65mm and 70mm films employ Mylar transparent tape with an adhesive-back which is applied to back of film. Solenoid action of splicer perforates tape in perfect alignment with film perforations. Source is Hollywood Film Co., 956 No. Seward St., Hollywood 38, Calif.

Continued on Page 510

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WHAT'S NEW

Continued from Page 508

Vari-Focal Lens With Finder

The Traid Twenty-Eighty Variable Focus Lens features a built-in viewfinder and fits any 16mm camera equipped for C-mount lenses. Providing a range of focal lengths from 20mm to 80mm, for wide-angle, normal, and telephoto shots, the iris is constant at f/2.5 and focusing scale is 48" to infinity. Finder may be positioned for any spot in the 360° range around the camera and a framing mask can be rotated for horizontal positioning. The eyepiece closes to prevent feedback of light. Write Traid Corporation, 17136 Ventura Blvd., Encino, Calif.

Transist-O-Sound Amplifiers

S.O.S. Photo-Cine-Optics Inc., 602 West 52nd St., New York 19, N.Y., is distributor of the Transist-O-Sound amplifiers for Auricon sound cameras. Recently improved circuitry now makes it possible for the camera operator to open the mike control all the way and still obtain normal level on the track due to the unit's exclusive "volume limiter". Low microphone input impedances of 35 to 250 ohms permits high quality broadcast-type mikes to be used. Separate gain controls for each channel afford 20% more available microphone gain per channel than old model. Eight transistors and one diode are used in a RCA-licensed solid-state circuit with wide range audio. List price, including batteries is $425.00

Film Processing Tape

Eliminating need for rivets or staples and providing a quick, economical non-slip splice is new Permacel Film Processing Tape designed for film laboratory use. Tape's Mylar base has pressure sensitive adhesive on one side. Tape can be used as a pre-splice on motion picture film prior to processing. Adhesive will not exude or transfer and both adbesive and backing are unaffected by heat or chemicals used in film processing, according to the manufacturer, Permacel, New Brunswick, N.J.

Zoom Motor Drive

A compact motor drive for the Angenieux 12mm-120mm zoom lens is announced by Cine 60 Motion Picture Equipment, 630 Ninth Ave., New York 36, N.Y. Motor is powered by a small 2.5-volt button cell rechargeable battery incorporated in the hand control unit. List price is $225.00

Zoom Lens Control

Camera Equipment Company, Inc., 315 West 43rd St., New York 36, N.Y., announces a novel knob control device for use on the 12mm-120mm Angenieux zoom lens. The CECO knob control replaces hand crank normally supplied by the lens manufacturer, and has grooved surface which enables camera operator to hold camera with right hand and control zoom lens with left. Whereas crank requires 3¾ turns to zoom from 12mm to 120mm, knob control requires but one half turn, CECO points out.

Q-I Strip Lights

Mole-Richardson Company, 937 No. Sycamore Ave., Hollywood 38, Calif., announces a series of new cyc-strip lights utilizing quartz-iodine illumination elements. Series includes four-light three-light, and a one-light unit. Lights provide soft, even illumination on vertical cycs, or can be hung from battens to light upper portions of tall cycs. They can also be positioned to light vertically or to provide footlight illumination. All units use 500-watt quartz-iodine 2000-hour non-blacken-

Continued on Page 556

ACME ANIMATION STAND

The acknowledged standard of the industry Complete animation system at a fraction of original cost For high-speed production of special effects, titles, film strips, etc incorporates motorized vertical drive, vacuum platen, two sliding trays of lights, and separate electrical control panel Supplied with B&H animation camera, background projector and rear screen Features full drift compensation, backlighting and fully adjustable platen

SALE PRICE $6,500.00

MITCHELL 16MM CAMERA

16mm version of the famous 35mm Mitchells, with special features incorporated for 16mm producers Many outstanding features Current list for this complete outfit is over $10,000

Sale price includes
- 16mm Mitchell built blimp
- Two 400 ft magazines
- Erect image viewfinder with built in mattes
- Follow focus unit with cams for 5 lenses
- Finder reducing adaptar
- 35mm matte box and sunshade
- Standard 35mm friction tilthead
- Standard 35 legs
- 110 volt sync motor with relay
- 15mm f/2 3 Baltar lens
- 25mm f/1 5 Baltar lens
- 40mm f/2.3 Baltar lens
- Cases for camera and accessories

The perfect outfit for the professional producer!

SALE PRICE $6,800.00

MITCHELL NC CAMERA

A full studio camera complement for virtually any type of motion picture work Current list value represented is over $14 500 Our special price includes camera and the following

- Four 1,000 ft sound magazines
- Erect image viewfinder with built-in adjustable mattes
- Finder support bracket
- Reducing finder adapter lens
- Enlarging finder adapter lens.
- Combination matte box/sunshade
- Wide angle matte box/sunshade
- Standard size friction till head
- Standard size tripod
- Baby tripod
- 220 volt, 3-phase synchronous motor
- 220 volt 3-phase interlock motor
- 12 volt variable speed heavy duty motor
- Set of 5 matched lenses
- 7 cases for camera and accessories

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GORDON ENTERPRISES makes MAJOR BUYS from HAL ROACH STUDIO!

MOVIOLA

35mm picture head with composite sound Two separate 16mm magnetic sound heads Late model green with footage counter and electric brake List for $3575 In "like new" condition

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ANGENIEUX ZOOM LENSES

Superb optics, small size, light weight and the finest craftsmanship provide unparalleled utility and perfection

12 to 120mm f/2 2 for Arri 16 — NEW $725 00
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35 to 140mm f/3 5 for Arri 35 — NEW $1200 00
Used $850 00
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25 to 250mm f/3 2 for Arri 16 & 35 — NEW $1995 00
Rental $100 00 per week

MITCHELL BNC STUDIO CAMERA

The "standard" of the industry Its many built-in features suit the BNC for virtually all studio assignments Camera has insulated housing, and is in excellent condition Current list is over $20 000 Sale price includes combination matte box and sunshade, viewfinder with built-in mattes, wide angle matte box, set of 6 matched lenses, 220 volt synchronous motor, four 1000 ft. sound magazines, and 6 carrying cases for camera and accessories

SALE PRICE $13.950.00

NEUMADE FILM CLEANER

Automatically cleans, polishes and rewinds 35mm film in one operation Specially designed for scratch free operation All-steel housing with polished chrome rollers and hardware In excellent condition

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HOUSTON FEARLESS TRIPOD HEAD

Provides smooth, easy pan and tilt of TV and motion picture cameras weighing up to 150 lbs 360° pan, 45° tilt, forward and back Single helical-type control Unbalanced-load compensator Independently operated drag and brake control Head rotates on sealed ball bearings Fits all standard TV pedestals and standard Mitchell tripods List $495

SALE PRICE—NEW $385.00

35mm SYNCHRONIZER

Manufactured by Hollywood Film Co In excellent condition Four gang type Lists for $170
SALE PRICE $90.50
H.F.C. 35mm 2 gang List $120 00
SALE PRICE $70.00
Maviola 2 gang and 35/2-gang 16mm combination List $350 00
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Now being offered at a fraction of original cost, this studio production equipment is in top operating condition ready to go to work for you! The items shown here represent but a small part of the total inventory acquired

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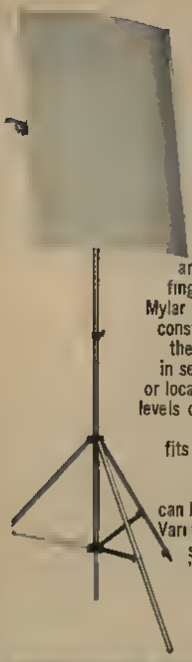
Texas
ISI Film Productions, Inc
3327 Winthrop St Fort Worth

Northwest U S
Vince Johnson Co
2614 N E 86th St, Seattle Wash



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Truly portable, light weight unit has bright, even reflection pattern you can soften and spread out with finger operated lever. Mylar and aluminum-slat construction is rigid in the wind, yet rolls up in seconds for storage or location travel. Stand levels on uneven ground supports 200 lbs., fits in 4x4 carry-case. Scratch resistant reflecting surface can be washed "new." Vari-flector doubles as shadowless indoor "fill." Available in large (4x4) and small (2x2) sizes. Pat. Pend.

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Vari-flector

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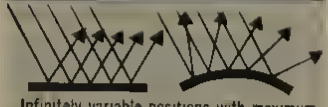

Infinitely variable positions with maximum brightness range and "spread" of 3 times

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4x4 Vari-flector complete with stand and case (7"x42") $149.50
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BEHIND THE CAMERAS

WHAT THE INDUSTRY'S CAMERAMEN WERE SHOOTING LAST MONTH

BY MARION HUGHES

NOTE: Asterisks following titles indicate television film productions.

ALLIED ARTISTS

PHILIP LATHROP, ASC, "Soldier in the Rain" (Blake Edwards Prod.) with Jackie Gleason and Steve McQueen. Ralph Nelson, director.

DAVIS BOULTON, "Never Put it in Writing" (Seven Arts Prod., shooting in Dublin) with Pat Boone and Fidelma Murphy. Andrew Stone, director.

BIOGRAPH STUDIOS—New York

JOHN S. PRIESTLY, "East Side, West Side"*.

CASCADE STUDIOS

WINTON HOCH, ASC, Commercials*.

HENRY FREULICH, ASC, Commercials*.

CHUCK WHEELER, Commercials*

TYLER BYARS, Commercials*

CBS—N.Y.

CHARLES MACK, LEO ROSSI, ROBERT CLEMENTS, "CBS Reports"*.

FRED HOFFMAN, MIKE ZINGALE, HAROLD POSNER, "Candid Camera"*

BERNARD DRUSNER, "Twentieth Century"*

COLUMBIA STUDIOS

ARTHUR E. ARLING, ASC, "Strait Jacket" (Wm. Castle Prod.) with Joan Crawford and Diane Baker. William Castle, producer-director.

JOSEPH BARBERA, "Whistle Your Way Back Home" (Hanna Barbera Prods.; feature cartoon, color) William Janna, producer director.

FRED GATELY, ASC, 'Farmers Daughter"*, Commercials*

GERT ANDERSEN, ASC, Commercials*

BURNETT GUFFEY, ASC, Commercials*

RICHARD CUNHA, Commercials*

WALTER LASSALLY, "Psyche 59" (Troy Schenck International Prod., shooting in England) with Curt Jurgens and Patricia Neal. Alexander Singer, director.

CHRISTOPHER CHALLIS, "The Long Ships" (Warwick Films Prods., Technirama-Technicolor, shooting in Yugoslavia) with Richard Widmark and Sidney Poitier. Jack Cardiff, director.

EUGEN SHUFTAN, "Lilith" (Centaur Ents. Inc.) with Warren Beatty and Jean Seberg. Robert Rossen, producer-director.

ROBERT WYCOFF, 'Grindl"*

WILKIE COOPER, "Siege of the Saxons" (Chas. H. Schneer Prods., Tcolor, shooting in London) with Janette Scott and Ronald Lewis. Nathan Juran, director.

JEAN BADAL, "Behold a Pale Horse" (Fred Zinnemann Prod., shooting in France) with Gregory Peck and Anthony Quinn. Fred Zinnemann, producer director.

JACK MARTA, 'Route 66"*

CHARLES WELBORN, "Redigo"*

DESILU—Culver City

GLEN MACWILLIAMS, ASC, "Glynis"*

CHARLES STRAUMER, ASC, "The Greatest Show on Earth"*.

DESILU—Gower

TED VOIGTLANDER, ASC, "Ben Casey"*.

ROBERT PLANCK, ASC, "My Three Sons"*.

ROBERT HAUSER, ASC, "The Breaking Point"*.

EDWARD FITZGERALD, ASC, "Lassie"*

FILMWAY STUDIOS—New York

MORRIS HARTZBAND, ASC, "The Defenders"*.

Continued on Page 514

PROGRESS · LOYALTY · ARTISTRY · ASC

AMERICAN SOCIETY OF CINEMATOGRAPHERS

Founded January 8, 1919, The American Society of Cinematographers is comprised of the leading directors of photography in Hollywood motion picture and TV film studios. Its membership also includes cinematographers in foreign lands. Membership is by invitation only.

•

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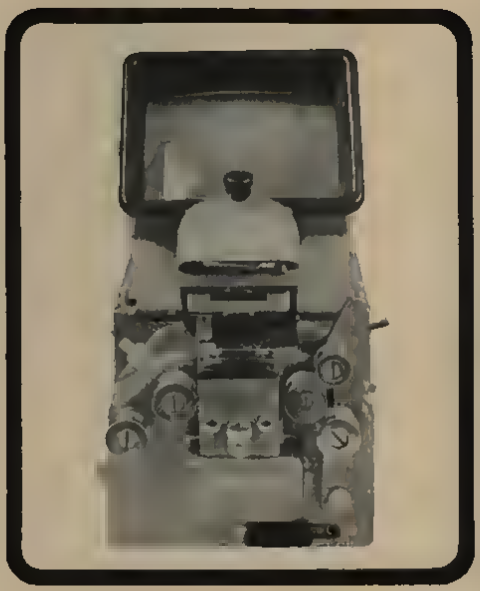
SOS Ediola 16mm Action Viewer



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Editing—the Easy Way

This is the Ediola Model M-16 Senior, the most advanced of its kind. Big clear 3"x4" picture gives easy viewing in motion or still, can be viewed in a lighted room. There's no excess heat, even when film is still. Use the Cue Punch for Work Prints, remove the optical element to clean. 6"x10"x10", only 7½ pounds.

SOS EDIOLA 16MM ACTION VIEWER
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Want to convert to double system editing? If you now own the Ediola shown here, our MAGNIOLA CONVERSION KIT ($315) will fit with the Action Viewer to give you the excellent double system editing you want. The Kit contains everything found in the Magniola except, of course, the Action Viewer. Send for brochures and complete price lists on Ediola, Magniola, component and replacement parts.

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FIRST 3-wheeled Creb Dolly — Just as efficient as a 4 Wheeled dolly and more economical — has 3 dual wheels with 10" pneumatic tires

Specifications:

Width—35" | Construction—Stainless Steel

Length—48" | Seats—2 uphalstered adjustable height

Weight—290 tbs | Push Bar—Folds down, with transmission lever for crabbing and tracking

Platform Height—16"

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ARRIFLEX at work — ONE OF A SERIES*

O FRED KEZER (left) CHIEF OF THE CRYSTAL GROWTH SECTION BASIC RESEARCH GROUP AND SIDNEY L FELDMAN, MOTION PICTURE SPECIALIST SET UP ARRIFLEX 16 WITH 90MM MACRO KILAR AND LONG EXTENSION TUBES FOR TIME LAPSE MONITORING OF CRYSTAL GROWTH

ARRIFLEX® monitors crystal growth studies for U. S. Army Engineers

Crystal growth studies, like all scientific endeavors at the U S. Army Mobility Command's Engineer Research and Development Laboratories, Fort Belvoir, Va , have as their ultimate object, better equipment and military techniques to meet the demands of modern warfare

These studies, carried out under controlled conditions, are vital to the basic research being conducted by the Laboratories on metastable substances.

The Arriflex camera has proved an essential tool in these investigations, performing the 24 hour a day, long term monitoring that would otherwise require the services of a highly-trained technician Due to its flexibility, the Arriflex can be programmed to catch by time-lapse photography any phase of change in crystal growth, or other phenomena

In addition to growth rates, other parameters of specimens can be determined These include density changes in the vicinity of the crystals, density changes of the solution in the vicinity of the crystals, gas evolution rates, and temperature gradients The camera monitoring of all these facets is not only safer but more accurate than human operation.

Arriflex's famed reliability and ready adaptability to any lab oratory, studio or location assignment, "From the microscope to the missile range," make it the favorite of professional photographers It can help solve **your** filming problems, too

From the microscope to the missile range— from spot locations to sound stages — Arriflex professional motion picture cameras are the dominant choice of filmmakers in science, industry, and entertainment They're lightweight, rugged, tremendously versatile — uniquely suited to a range of applications virtually without limits Here are some of the features that give Arriflex cameras their remarkable capabilities:

• MIRROR-SHUTTER REFLEX VIEWFINDER • REGISTRATION-PIN FILM MOVEMENT • 21°-DIVERGENCE 3-LENS TURRET • CONTOUR HAND GRIP • FRAMES-PER-SECOND TACHOMETER • COMPLETE ACCESSORY SYSTEM . . lenses, standard and special-purpose electric drives, power supplies, time-lapse equipment, film magazines, sound blimps, tripods

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NEW BOOK REPORTS

The Technique Of The Documentary Film

By W. Hugh Baddeley, F.R.P.S., M.B.K.S. Hastings House, Publishers, 151 East 50th St., New York 22, N. Y. 5¾" x 8¾"; 268 pages.

Among the problems discussed in this comprehensive work are those of shooting on distant and remote locations, as well as the difficulties of providing effective interior lighting outside the studio Covered in detail, too, are the problems of sound recording both under studio conditions and on location—including acoustics, extraneous sound and background noise. And the techniques involved in laying and mixing the various recordings to produce the final master sound track are described stage by stage.

There is a useful section on the methods of making release prints, with advice as to which is the most suitable in a variety of circumstances. Especially valuable are those practical hints and suggestions offered by the author from his long personal experience These range from budgeting, dealing with foreign customs, obtaining fullest insurance cover to producing sync sound on remote locations.

The book is profusely illustrated with line drawings to illustrate points explained in the text.

•

Principles of Cinematography

By Leslie J. Whaalar, F.R.P.S., M.B.K.S. Published by Fountain Press, 46-47 Chancary Lane, London, WC, England. 5½" x 8½"; 424 pages. $10.50.

This edition of what has now become a "standard work" on the subject has been completely revised and re-written. Much of the new material is of particular value to the film technician engaged in the television industry and, as in previous editions, the whole work is directed to the practical man and all who are connected with the motion picture industry.

The book remains unique in forming a bridge between highly academic treatises and the popular concepts of "movie making" while, at the same time, providing a great deal of hitherto unpublished information in a most readable form.

The author explains in a wealth of detail the processes and apparatus used in the production and exhibition of motion pictures, both in the film and television industries. Accordingly, the book could have been more aptly titled The term *cinematography* is pretty well understood the world over to apply to the photography of motion pictures, not to the entire realm of the film production industry. In our opinion, "Principles of Motion Picture Production" would be a more descriptive title for the book

Because the author has covered such a vast field, the book is arranged to include a short history of each main subject as it occurs in its logical sequence of film production.

Considerable portions of the book are devoted to the work of film laboratories, camera and projector mechanisms, the film in television and also to sound recording. Profusely illustrated, this authoritative work should be invaluable to all who work with or use motion picture film

•

Principles of Color Sensitometry

A raport of tha Color Sensitometry Subcammittaa of tha Sociaty of Motian Pictura and Talavision Enginaars, and publishad by the Sociaty at 9 East 41st St., New Yark 17, N. Y. 5¾" x 8¾"; 102 pagas.

Color photography has brought into sensitometry new methods, new instruments and new terms tailored to the new task They contribute to a new division of science called *color sensitometry*.

It was the consensus of the members of the (1948) Color Committee of the S.M.P.T.E. that a report outlining the principles of color sensitometry would be one of the most urgently needed contributions the Society could make to the industry. This valuable work has been brought up to date and revised under the guidance of a subcommittee headed by Francis H. Gerhardt. It is virtually a "must" for anyone whose work is closely related to quality control of film production. ■

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THIS SUPERB FILM MAKING EQUIPMENT

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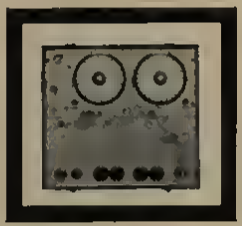

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CECO 400' CONVERSION for CINE VOICE CAMERA Net $450.00
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5000 ft. capacity allows 2½ hrs of uninterrupted showing. Light output with 2000 watt Xenon measures 4,100 lumens. Fills a Cinemascope screen over 40 ft. wide 2 speed synchronous motor.

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Q & A

Technical Questions and Answers

Q.— *I have access to an Auricon sound-on-film camera and am wondering if I could use it in a double-system setup. If I shoot picture and sound with this camera in normal manner, the film I get back from the lab has the picture and sound track combined and, of course, this presents a problem in editing. Now, can I have the lab make a print of the film and also a second print of the optical track only, so that the two can be handled in editing in the conventional manner? Will quality of the sound track be degraded if transferred from the original film to magnetic film?*—D. S. Endicott, N. Y.

A.— You do not state if you plan to record the sound on film with the object of separating it later for editing purposes or if the sound is to be recorded separately on tape in sync with the camera film. In either case, the lab procedure stated will prove satisfactory. When sending your film to the laboratory, accompany it with detailed instructions as to your requirements regarding separation of sound track and film.

The process of electro printing which most major labs offer, will render a satisfactory magnetic track from your optical original.

Q.— *I have four questions regarding magnetic sound stripe.*

1) Is there any particular specification required for soundstripe on 16mm film as used with a Bell & Howell Model 602-C projector?

2) Can a satisfactory stripe be applied to double-perforated 16mm film? Can it be applied to intercut single and double perforated film?

3) Please name a competent sound stripe applicator in the Hollywood area?—R. C. D., Southgate, Calif.

A.— Question 1: The projector mentioned is made in England. Sound stripe specifications are the same for this machine as for the U.S.-made model.

Question 2: Only a quarter-track (25 mils wide) will be satisfactory for intercut single and double-perf film. If the track is any wider, it will overlap the perforations of the double perf sections of your film, causing distortion in the sound for these segments.

Question 3: Yes.

Question 4: The Vitatone Co., 736½ So. Atlantic Blvd., Los Angeles 22, Calif.; also, Color Reproduction Co., 7936 Santa Monica Blvd., Hollywood 38, Calif.

Q.— *Will an exposure meter reading of daylight for black-and-white film also apply to color film? For example, if the meter reading for black-and white film with an ASA rating (daylight) of 50 is f/16 at 1/400 sec. exposure, will the same rating also apply*

Continued on Page 520

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QUESTIONS & ANSWERS

Continued from Page 518

to a color film with the same ASA rating?—P. A. A., Los Angeles, Calif.

A.— As we understand your question, you wish to know if a meter reading of a given light condition is applicable to either black-and-white or color film where both films have the same ASA rating—namely ASA 50. In such case, the answer is yes. In calculating exposure with a meter, you can always be sure of obtaining the correct reading providing you set your meter to read exposure for the ASA rating of the film you are using. Whether the film is black and white or color makes no difference, as long as the ASA rating of both is the same.

Q.—*I am a medical missionary in Tanganyika, using a Bolex H-16 camera with three lenses plus a Pan Cinor zoom lens. Where can I purchase an inexpensive anamorphic lens for wide screen process? I would like an anamorphic lens that can be used in combination with my zoom lens.*—J. L. N., Kiombo, Tanganyika.

A.— The type of anamorphic lens you describe, which could be used with a zoom lens, is extremely costly, probably in the neighborhood of $4,500. This lens is normally made for the Arriflex 35mm camera, but it could be adapted for C mount for the Bolex H-16. It would seem incongruous, however, to mount such inexpensive lens on a 16mm Bolex camera.

Would suggest that you write to S.O.M. Berthiot, Paris, France and inquire if they can supply one of their zoom lenses equipped with an anamorphic lens. ■

DON'T FORGET TO WRITE·

If you've got a problem of any kind related to making a motion picture, be it color or black and white, 16mm, 35mm, or 70mm, let us help you with professional advice. Be sure to accompany your letter with a stamped, addressed envelope for your reply, addressing it to Question & Answers Editor, American Cinematographer, 1782 No. Orange Dr., Hollywood 28, Calif.

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TYPICAL of coverage by Photo Patrol cameras is this film clip showing horses rounding turn into home stretch

ONE OF THE SEVERAL dual-camera setups used by Photo Patrol Inc, in covering thoroughbred races at California tracks Author is shown using powerful monocular finder mounted between cameras to maintain accurate centering of lenses on horses as they charge toward him down the stretch

Cameras Follow The Horses

How Photo Patrol's 16mm cameras mounted strategically around thoroughbred race tracks completely record every race and provide track officials with dependable pictorial evidence in event a foul is claimed by a rider or judge.

By AL WETZEL, A.S.C.

IF YOU ARE a devotee of the Sport of Kings, you are probably aware that stringent rules coupled with almost flawless surveillance of both horses and riders during each race insures honest competition and a fair shake for those who lay a bob or two on their favorite bangtail.

It wasn't always this way, however. Today important racing meets are monitored by movie cameras, but only a few decades ago no one thought of watching anything else during a race but the horse they had bet on. Deliberate fouling by unethical riders or the uncontrollable antics of a fractious thoroughbred could only be reported by the rider fouled and he seldom could offer proof to back up his claim.

In almost every state of the Union there are conducted annually several racing meets ranging from small County Fair events to the large Association meets. In almost every case, such events are under rigid control of State racing commissions who not only sanction the racing dates but work with various racing associations in establishing rules and regulations governing such events and the operation of turf clubs.

Almost since the inception of thoroughbred racing in America, the officials who supervise the running of races have consisted of a representative of the racing board of the respective state, a presiding steward, plus placing, patrol and paddock judges.

Several years ago the photo-finish camera was introduced as an aid to the judges when called upon to render a decision on a close-finish race, and also to provide a dependable photographic record of the winning horses at the finish line.

Today, as then, the Presiding Steward and Placing Judges take up positions at the finish line. The Patrol

Judges are dispersed around the track and take positions in control towers erected at or close to the quarter-mile posts around the track's perimeter. From these strategic positions, and with the aid of powerful binoculars, the Patrol Judges—before the days of Photo Patrol — followed the performances of both horses and riders during the time they moved through their respective areas, and were able to observe any questionable maneuver and promptly report it to the Presiding Steward by telephone.

In 1944, at Hollywood Park in Los Angeles, a new innovation was introduced that was a forerunner of the present-day Photo Patrol. Compact spring-driven 16mm cameras were mounted beneath the binoculars used by the judges, which enabled them to record in motion pictures what they saw through the binoculars simply by pressing a convenient button and holding it for the period the horses were passing through their viewing range. Afterward, the film was removed from the cameras, picked up by courier in a fast car, and rushed to a processing lab in the grandstand.

While this innovation offered some advantages, many were offset by disadvantages such as unsteady pictures resulting from a judge's shaky hand, the added weight of the camera on the binoculars, or both, and also because of the time lost in unloading and reloading the cameras with film.

But the idea of motion picture records of each race caught on and as a consequence, a method was sought that would provide a more satisfactory film record. Meantime, Telefilm, Inc., in Hollywood had become interested in this new field of film making and set about to provide tracks with a dependable service that would guarantee satisfactory records of each race on motion picture film. In 1945, Hollywood Park engaged Telefilm to take over its patrol photography, and the use of the binocular-camera combination came to an end.

Telefilm's system involved positioning 16mm cameras and operators at strategic locations around the track to insure full coverage of a race, regardless of length. Following each race, the exposed films were collected by courier and rushed to Telefilm's processing lab under the clubhouse. Here the films were quick-processed and made ready for screening within minutes after the race was run. In the event of a riding infraction or claim of a foul, the films were screened, reversed, and re-screened as often as necessary to enable the judges to adjudicate the claim. This was the birth of the Film Patrol system which is in use today in a large number of tracks throughout the U. S.

Pioneered The System

I was one of the six cinematographers originally engaged by Telefilm to work the patrol positions at Hollywood Park during the first year the system was in use there. In the beginning, we used spring-wound 16mm cameras with lenses ranging from 2 inch to 6 inch, depending upon camera position and area to be covered. In all, there were four camera towers erected around the track. The positions were carefully chosen to enable each camera to pick up the horses moving directly toward it. In addition, two cameras were mounted on tripods on the grandstand roof—one at the finish line and the other on the "stretch run" section of the roof. Just as soon as the running horses had passed a cameraman, he quickly removed the film from the camera and dropped it to a courier who had timed his rate of travel around the track accordingly. Telefilm's lab under the grandstand although using simple rack-and-tank processing procedure, had no difficulty in delivering the processed film to the Track Steward within the prescribed time, ready to project.

It was during this first year of Telefilm's photo patrol operation at Hollywood Park that the film processing method was improved. A Houston 16mm reversal processor was installed. Bolex and Cine Special cameras equip

Continued on Page 546

PICTURED AT LEFT is Photo Patrol cameraman covering portion of a race in days when Patrol used spring wound 16mm cameras hand-held. The steel camera towers are still in use at many tracks. Compare this with the modern duel-camera set-up pictured at right atop grandstand. Cameras are Auricon's mounted with telephoto lenses protected by "stovepipe" lense shades. As in photo on opposite page, cutter uses powerful telescopic finder mounted between cameras to keep cameras accurately centered on horses as they move around track.

THE AERIAL IMAGE unit (beneath operator's hand) projects filmed scene onto table top of animation stand via angled mirror mounted under the framework. Result is a composite scene or setup produced in a single photographic operation

Aerial Image Techniques

In animated film production, aerial images are introduced by means of "underneath projection," resulting in a composite scene or set-up in a single photographic operation.

By VERN W. PALEN

ONE OF THE important things television did for the film industry was to give new impetus to animated film production, especially of TV commercials and spot announcements. New and improved equipment has been developed, making it possible for animation studios to turn out more effective films faster and more profitably. An old technique, aerial image, has been revived enabling producers of commercials to include optical effects in such films more economically and often with superior results over other methods.

Because Animation Studios, Inc., New York, has been doing outstanding work with aerial image techniques, we recently interviewed Albert Semels, president of the company, and asked him to describe the equipment and techniques involved and to cite examples of aerial image effects which his company has achieved for some of the more familiar TV commercials.

The diagram on this page illustrates a typical equipment set-up for aerial image photography in conjunction with animation; the procedure is described in the brief text adjacent to the photo. Other illustrations show the equipment in use and also some examples from TV commercials produced by Animation in which aerial image played an important part.

Q—Mr. Semels, would you describe the equipment used in your studio for aerial image work and also explain how the aerial image is developed and integrated with other subject-matter in the film?

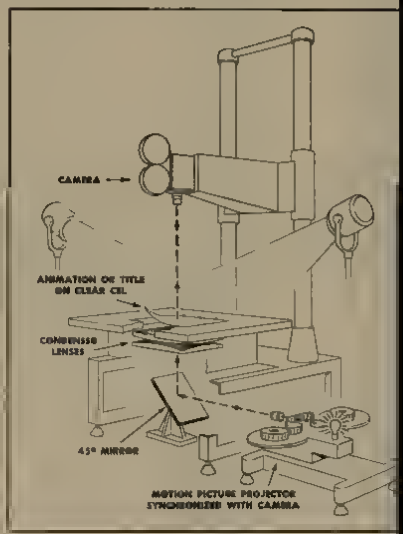
A—We use the standard Oxberry animation stand and aerial image unit. The latter consists of a projector head, lens system, stop-motion motor, first-surface mirror, and controls which are coordinated with all movements of the animation stand. The live-action scenes in the horizontal aerial image unit are projected from below, via the mirror, into the condensing lenses which are set in the table. Animated sequences or "stat" product shots can be placed in perfect registration directly over these live scenes and combined while being photographed by the camera above the table. In this way, for example, an animated character can be made to move about in a live action scene.

Q—Earlier, you told me you considered your aerial image equipment one of the most important tools in your business. What is its most important advantage for you?

A—The aerial image stand is increasing in usefulness. Production of many opticals required for today's TV spots is greatly simplified by the 11-inch projected aerial image which is superimposed on the surface of the table. It permits very accurate checking of the rendered animation to the original rotoscope scene.

Q—Can you cite a recent example of this?

A—In a recent Kool-Aid commercial (Fig. 1), animated characters were supposed to pull in a pitcherful of the drink, the pitcher having been recorded previously in a live scene.



After the animation was rendered, registering to the original rotoscoping, we went back and checked the movements. At the same time, the animator checked with the live scene. As we ran the live scene, he did a dry run of the rendered animation.

Q—What is rotoscoping?

A—Rotoscoping or more correctly, a rotoscope, is a frame by-frame tracing of the live scene that enables registering the characters or "stat" to the live-action. The original rotoscope is made by projecting the scene in the aerial image unit to the condensing lenses on the table. When a sheet of tracing paper is laid over the lenses it reveals the live action frame as if it were projected on a screen.

Q—What is the advantage of this procedure?

A—This process makes the job much easier for the animator. He is able to animate more freely and rapidly. You might say there is a certain amount of editing in this dry run with respect to the rendered animation and the live scene. When we finish with the dry run, we then make a take.

Q—Can you give more details on this operation as it was used in producing the Kool-Aid commercial?

A—The dry run was accomplished with the animator. The live scene footage of the pitcher moving across the screen was actually put into the Oxberry aerial image unit, projected up, and the paint and ink cels were positioned on the table. Frame by frame, we panned the cels together with the live scene. The animator checked each frame and recorded the position (in hundredths of an inch) on the dial counter of the pan bar.

Using this method, we can always be sure the match will be just as the animator wants it. There is never any doubt as to the accuracy and the matching of the two scenes. When the filming of the Kool-Aid commercial was finished, it was perfect and the producer was highly pleased.

Q—Now, if you were to do this job without aerial image,

Continued on Page 550

FIG. 1—FAMILIAR KOOL AID commercial which employed both live action photography (the pitcher) and aerial image (animation of face).

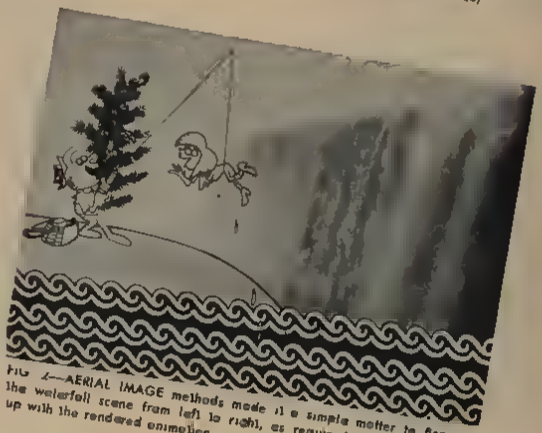


FIG. 2—AERIAL IMAGE methods made it a simple matter to flop over the waterfall scene from left to right, as required, and then match it up with the rendered animation.

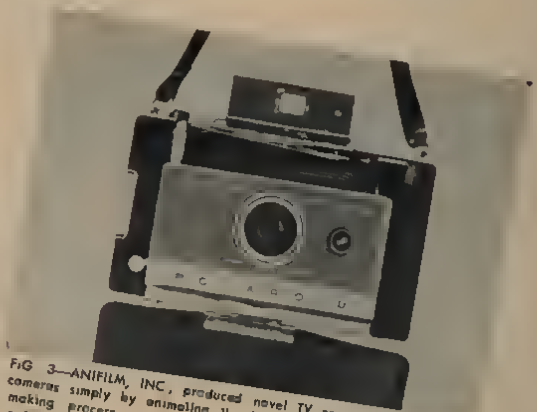


FIG. 3—ANIFILM, INC., produced novel TV commercial for Polaroid cameras simply by animating the key steps in the Polaroid picture making process in step motion photography, and completing the optical work on the aerial image equipment.

The Oxberry aerial image unit illustrated at left in combination with the animation stand makes it possible to simultaneously photograph a top-lighted animation cel and an underneath projected image from previously-filmed live action. It permits small products to be animated as in puppet work and then to be superimposed over a projected live-action scene. The work is accomplished with single-exposure or one-pass methods. Ride and registration problems are eliminated.

Since the aerial image is invisible to the naked eye, the camera can be rocked over to permit alignment at the film plane. The aerial image can also be viewed by placing a panel of ground glass or tracing paper on the animation table top. There is no loss of contrast because the aerial image is not affected by top lighting.

Beginner's Luck

Author's 16mm color film about Puye Indian ceremonial employed with imagination. The film offers a

AUTHOR James Morgan listens while Juan Gutierrez, Governor of the Santa Clara Indian Pueblo in New Mexico points out important symbolic features of Indian ceremonial dances some scenes of which were filmed from this vantage point

GEOGRAPHICAL SETTING and historical perspective of film was established by following Indian guide with tourists as he points out important symbols and structural points of ruins to group

By JAMES R. MORGAN

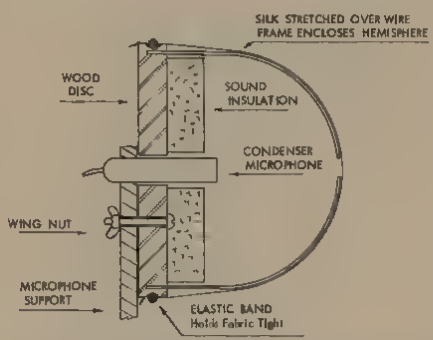
FOUR HUNDRED SEVENTY years have passed since Columbus first met American Indians; yet the red man is still largely a puzzle inside an enigma all wrapped in mystery.

Though my livelihood is earned as an engineer, I had been an amateur student of antiquities for 20 years prior to moving to the Santa Fe area of New Mexico in 1958. So it was with deep astonishment that I noticed important similarities between the Indian Ceremonial Dances I saw at the pueblos and the ancient rituals of Greece, Egypt and other Mediterranean countries. My curiosity was fanned to a high pitch as I watched the annual Puye Festival. The festival comprises a collection of many dances presented during two days of each July. It was inaugurated by the modern Santa Clara Pueblo in 1957 for the purpose of keeping alive and accurate the ancient Indian ceremonials that might otherwise die through lack of performance.

I resolved to learn more about the veiled allegorical meanings behind the ceremonials. My initial evening at the pueblo Governor's house led to an extended study over a period of six to eight months, during which we analyzed the subtle meanings of the ceremonials and compared them with Christian and other rituals around the world.

The pueblo Governor, Juan Gutierrez (Blue Water), and I agreed that the pristine qualities of the Original Indian Way were being significantly diluted with the ways of modern technology. We agreed also that the Indians were in every way entitled to the niceties of modern living; but we lamented the fact that so many of the finer esthetic qualities of the Indian's spiritual concepts were being unduly pushed into the background—and in some cases actually forgotten. It is already true that some ceremonials may never be danced again because not even the old men of the pueblo remember them well enough to present them properly.

This was the state of affairs that prompted the Governor and I to resolve to *do something* about documenting for future generations the present state of the art of Indian ceremonials before they became further altered from their original form. Deciding *what to do* about the problem was another matter. Neither of us were in any sense entertainers.



CROSS-SECTION diagram of microphone shield which author designed and mounted on field microphone to minimize wind rumble and spectator chatter. It consisted of simple hemispherical wire framework covered with silk fabric

In Filming Indian Ceremonials

was produced on a shoestring budget and illustrates a filming project in which mast equipment was deological interpretotion of ceremonials that cauld scarcely be ochieved by techniques other than cinematography.

PUYE INDIAN ceremenial dancers in colorful dress reenacted many of their famaus dances ter Morgan and his 16mm camera The dances featured impertant symbals such as the gaurd rattle, bells, etc

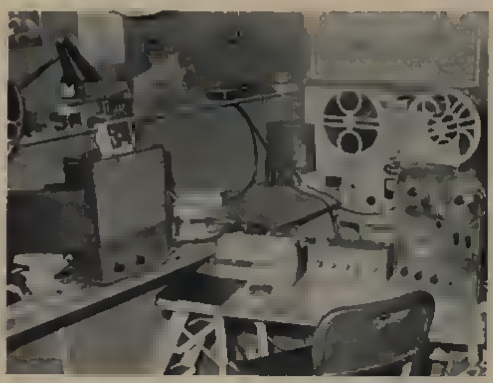
CLOSEUP OF one stage of the Blue Corn Dance, photographed by auther The Indian ceremenial dances express subtle but highly im pertant religious and historical concepts

I had considerable experience with amateur still photography and hi-fi recording but had never been in responsible charge of motion picture work. Above all, no money for the project was to be found anywhere. (A reputable organization in Northern California with world-wide experience in filming unusual things expressed interest in the venture, but backed out at the last minute for lack of time.)

All the techniques of documentation—written accounts, still photographs with tape recorded accompaniment, cinematography, etc.—were carefully evaluated against the task at hand. Everything except available money seemed to favor motion picture treatment. Motion pictures were especially favored because so much of the story centered around the elaborate Indian dances of which motion is a most vital part. Ultimately, I persuaded my wife to agree to the use of our entire cash savings for producing the film!

Perhaps the greatest factors contributing to eventual success of the filming venture were that there really was a message to convey and I had a very clear notion from the beginning of what I wanted to achieve. Financial limitations, however, forced some compromises in technology. It was immediately clear that a mere documentation on film of the proceedings of a ceremonial would be highly inadequate. (I understand some attempts in the early days of motion pictures to document the "secret" parts of the rituals in this manner lead more to misunderstanding than clarification and thus turned the Indians against all photography of their esoteric activities.) It was apparent therefore that ideological interpretations would be required if this effort were to succeed where others had failed.

Continued on Page 540



VIEW OF AUTHOR'S sound laboratory where much of the re-recording of taped sound tracks was done "It was a 'do it-yourself project," said Morgan, "really too much for one man to handle alone

It shouldn't happen to a dog . . . or cat for that matter. But it does — all too often! Someone gets behind schedule—feels that he has to cut corners Result: dull, "tired" prints, even though the original negatives were top quality Fact is, with a crisp, sparkling negative, anything less than the best is a waste of time and money. That's why it pays to GO EASTMAN all the way—negative and print-stock And in the case of questions—production, processing, projection

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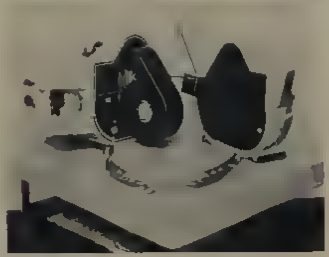
EASTMAN FILM

UNPARALLELED STABILITY is claimed for the new streamlined underwater housing Panavision designed for use with its Panaflex 65mm camera. Equipment pictured was used in filming underwater scenes for "Mutiny On The Bounty."

PHOTOS BELOW illustrate some of the salient features of the Panavision underwater housing: 1 is front side view showing large window, short stabilizing fins at side, external lens controls 'B" and red signal light "A" on top. 2 is rear view showing viewing port 'C' and the steel girdle and locking bolt 'D' which secures two segments of the housing. 3 is view looking through forward section, showing the coupled viewfinder 'E' and right hand external controls. 4 is rear view from left side showing both segments. Nickel-cadmium battery is at 'F'. The Panaflex camera is in place inside forward section of the housing.



Panavision's New Lenses And Camera Equipment

Slick new housing for filming underwater with the Panaflex camera paces Panavision's pragress parade.

By DARRIN SCOT

PANAVISION IS A NAME you see associated more and more with major motion picture productions. It is a wide screen system of motion picture presentation involving the use of Panavision cameras, Panavision lenses, or both. The Panavision Corporation has an enviable record of progress, from a humble beginning in lens design and production only a few years ago, the company has moved steadily forward and today Panavision lenses and cameras are increasingly used in the production of top budget motion pictures.

An article in our May, 1960, issue entitled "Panavision's Progress" summarized some of that company's outstanding achievements in the design and manufacture of motion picture cameras and lenses, and concluded with the statement that there were other new designs on the drawing boards at Panavision, including a new ultra wide-angle anamorphic lens for 35mm photography, a 35mm anamorphic lens incorporating the zoom feature, plus other optical and photographic devices "about which it is too early to talk."

The purpose of this article — essentially an extension of our earlier report —is to "talk" about some of those designs and devices plus some others that were not even in the planning stage three years ago. These include a waterproof housing or "blimp" for underwater photography with the Panaflex 65 camera, Panavision lenses for 65mm photography, Varispeed wild motor, Ultra-Panavision 65 cameras, 35mm anamorphic lenses, and the Panatron—

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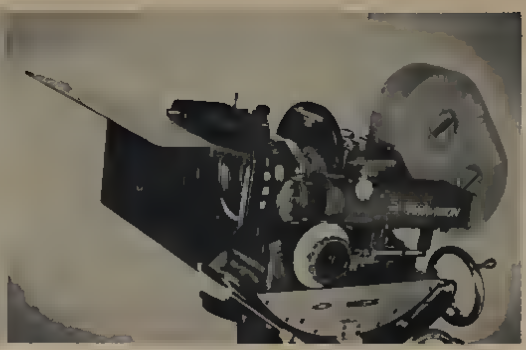
General Manager: John Page

PANAVISION 65MM studio camera, showing soundproofed magazines, widescreen sunshade, coupled finder and operating controls



PANAFLEX 65 camera equipped for sound stage use. Added equipment consists of widescreen sunshade, finder, follow focus control

a 12 to 96 volt power converter—and improvements made in the Panaflex 65 camera described in our earlier report.

The Underwater Blimp

The Panavision underwater camera housing or "blimp" is a two piece unit, as the accompanying photos show, designed for use with the Panaflex 65 camera. Cast of aluminum, the two sections fit snugly together and are secured with a single bolt. According to Panavision, this insures uniform fit of the two sections and avoids the possibility of a leak which sometimes occurs with some underwater housings having a multiple-bolt locking set-up that tends to warp the segments when the bolts are not tightened uniformly.

There are external remote controls for focusing, setting the lens aperture and adjusting the motor speed. A studio-type finder enables the camera operator to observe the full scene or subject, sharply defined on a ground glass, the same as with a studio camera. Also visible in the finder, at the top of the ground glass, are indicators which show the focus setting, the lens aperture in use and the built-in exposure meter reading. The built-in photoelectric meter is engineered to match the angle of the lens in use on the camera, thereby avoiding any intrusion of stray light from above on the photo cell. The meter is not coupled with the lens and does not automatically adjust the lens aperture; this function is carried out by the operator through the remote aperture control mentioned earlier.

When using the blimped camera under water, the operator may change lens focus and aperture setting virtually with a flick of the thumb and without removing his hand from the grips at either side of the housing. A large knob with engraved scale located close to the hand grip on the left side affords control of both focus and aperture settings.

A control knob on the right hand side affords external adjustment of the speed of the camera motor. There is provision also for observing the camera's footage counter and tachometer. A red light mounted on top of the housing, near the front, indicates when the camera is "rolling"—important where actors or others working under water before the camera need this information.

Hydrodynamic stability of the underwater housing is insured by two short, stubby "wings" extending at either side which also form the supports for the hand grips. These act as stabilizers for the camera when it is moved under water by the operator. Ordinarily, a camera operator with swim fins on his feet and swimming and pushing the camera before him tends to wobble from side to side, because he must keep his hands on the housing grips. Without the stabilizing wings, the housing, too, would wobble with him.

Removable weights are provided for the housing enabling its buoyancy to be increased or decreased, so that it will be the same for either fresh water or salt water use. Rated buoyancy for the housing with camera is ¼ pound—sufficient so that in an emergency requiring the camera operator to rise quickly to the surface, he may release his grip on the housing with assurance that it will rise and follow him unaided to the surface.

When mounted in the underwater housing, the Panaflex camera carries

Continued on Page 552

PANATRON POWER converter with camera speed control at right. It delivers 96 volts of DC current from a 12 volt battery, sufficient to drive camera and recorder in sync. As with other Panavision equipment, the Panatron is rented or leased, never sold.

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LARGEST SUPPLIERS IN THE EAST: Motion Picture, TV Lighting and Grip Equipment, Props, Generators

New Life For Old Commercials

How producers of animated TV commercials can effectively update old presentations for residual benefits to both client and producer.

By BOB ALLEN

ORIGINAL format

REVISED and updated with new product copy

OLD TV COMMERCIALS never die. Revised and updated, many successful animated TV spots are being re-run in altered format with substantial residual results for the sponsor.

According to Earl Klein, President of Animation, Inc., Hollywood, his company has enabled many sponsors to trim advertising budgets as much as $7,000 by utilizing most or all of the animated film footage from retired commercials and updating it with segments of new material to promote another product for the company or feature some new improvement in the product originally advertised.

"Any advertiser who uses animated TV commercials can realize significant savings by utilizing its old commercials in the production of new ones," Klein explained. "We have put together fresh and effective commercials by updating old, but proven ones.

"The fact that some of these old commercials were five to eight years old in no way hindered the effectiveness of them in their revised format. This is characteristic of the timelessness of good animated presentations and the flexibility of motion pictures.

"Fashion trends that tend to date live commercials—hair styles, automobiles, or clothes—do not have any common denominators in animation. To begin with, animated characters, trade marks, or animals, are not subject to current styles and modes. Therefore, they do not become unfashionable or dated with the passage of time."

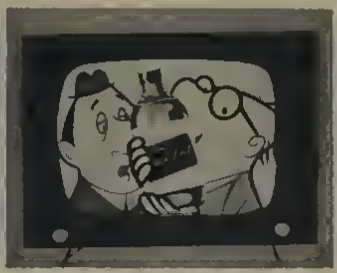
Since 1960, several agencies — J. Walter Thompson Company, Campbell-Mithun Inc.; Lang, Fisher and Stashower Inc., and MacManus, John and Adams, Inc. — have called on Animation, Inc. to utilize old commercials for new products, identification, brand names, etc.

For example, J. Walter Thompson is currently doing experimental work with a six-year-old Aunt Jemima commercial. Klein estimated the original cost of the commercial at $8,000. A new commercial utilizing the original footage will cost approximately $1,000.

Animated commercials can be updated by removing undesired items or sections from the old print and adding more information to the new. This can be done by anyone of several methods, e.g., matteing or double exposures. In matteing the undesired part of the old film is blocked out, or masked. Then a new master negative is run through a precision optical printer along with the masked film and a third negative containing items to fill the blank places. The resulting new master negative then contains the composite picture—the commercial in revised format.

For example, when Carling's Brewery decided to merchandise its Black Label beer in a large bottle, it created no serious advertising budget problem for Lang, Fisher & Stashower, Carling's advertising agency. The agency merely had the old style Carling bottle replaced by a rendition of the new

ORIGINAL format featured old style bottle



REVISED format accented new container

and larger one in the prints of the updated commercials, which utilized substantially the negative footage of the original, as illustrated here.

The MacManus, John & Adams agency handled a similar situation in the same manner. When the Kroger supermarket chain bought out the Krambo chain, the name *Kroger* was readily replaced by *Krambo* in standard Kroger commercials.

Sometimes animated commercials do not require any changes. A case in point: some 60 second spots that were eight years old, were re-used by MacManus, John & Adams, Inc. for Kresge without change. Neither the product or sales message had changed. Therfore, the commercial was as good as new.

Klein has also taken advantage of this longevity and flexibility in another way. His firm packages syndicated commercials for use by industries and associations. By using "A" and "B" film rolls, Klein can make standard commercials that are adaptable to several different users in the same field, and at the same time. This greatly reduces the production investment for all of the users.

In this process, action is filmed on the "A" roll and the product or sponsor identification on the "B" roll. In making a print for a market only a new "B" roll has to be made. The "A" roll and new "B" roll are optically printed, and a composite made for each user.

For example, the Zimmer, Keller & Calvert agency had Klein's organization produce a series of 20-second animated spots for the Michigan Milk Producers Association. Utilizing the "A" and "B" roll technique, the same series was sold to 16 other dairy asso-

Continued on Page 549

WHEN KROGER purchased the Krambo chain, original Kroger TV commercial was easily altered to fit the needs of Krambo's TV promotion

CINE-TECHNICAL TRENDS

Ansco Debuts Three New Color Films

Three new Anscochrome type films for color motion pictures have been announced by the Photo & Repro Division of General Aniline & Film Corporation. The new films, according to Ansco, represent an important step forward in improved color rendition and image sharpness, and are available in 16mm, 35mm and 70mm sizes.

The new color films are based upon the application of entirely new chemical formulations. A particular advantage of the new emulsions is their ability to accurately record fine detail. Superior acutance and extremely fine grain qualities produce extremely sharp rendition of a subject—a most important characteristic when the films are used for high speed motion analysis, stress studies, and other types of analytical color photography.

Remarkable color balance and fidelity to the subject have been noted throughout extensive field and laboratory testing of the new Anscochrome films, the company reports. They provide accurate full-range recording from the most delicate values of light pastels to fully saturated primary reds, blues and greens. An inherently high maximum density produces rich blacks, while a high resistance to stain and fog results in clean whites and sparkling highlights. A wide latitude in the new films protects against exposure errors, producing superior color of subjects that present a greatly extended brightness range.

The new Anscochrome films are:

ANSCOCHROME D/100

A daylight balanced, high speed (ASA 100) color reversal film that produces brilliant detailed color motion pictures by daylight illumination. Available in standard lengths of 16mm, 35mm, and 70mm sizes.

ANSCOCHROME T/100

A fast tungsten film balanced for 3200K lamps with a film speed of ASA 100. It produces brilliant color with maximum rendition of detail. Available in standard lengths of 16mm, 35mm, and 70mm sizes.

ANSCOCHROME D/200

Extremely high speed (ASA 200) daylight balanced color reversal film for low level light situations and high speed studies. Available in standard lengths in 16mm, 35mm, and 70mm sizes.

All of the new Anscochrome films are sold without the cost of processing included in the purchase price. They are designed for user or commercial processing in the Anscochrome 80°F process for faster access to the final result.

e

Emulsion Technology

The preparation of the light sensitive layers, known technically as emulsion layers, is a highly complicated operation. A large number of chemists at Kodak's Research Laboratories in Rochester, N Y , are assigned to the study of the emulsion-making techniques and to the development of new silver halide emulsions for a wide range of applications. These investigations have such objectives as increasing the absolute sensitivity of emulsions to light, improving the keeping properties of these emulsions, decreasing the graininess, and reducing the tendency to fog, i.e., the tendency to produce density in unexposed areas. Extending and carefully controlling the spectral sensitivity of emulsions are equally important.

Effects of sensitizing dyes, dye-forming couplers, and many other types of compounds prepared by the organic chemists are determined by incorporating them into emulsions and measuring the photographic result. The influence of the methods used to prepare silver halide crystals on their sensitivity, grain size, and general photographic properties are also important. Modified natural and synthesized polymers are evaluated as peptizers and as vehicles for the silver halide grains. Both physical properties of polymers and their compatibility with photographic systems are investigated.

The general technology of coating photosensitive layers, subbing layers for adhesion control, antistatic and antihalation layers is intensively studied. In the case of the preparation of multilayer color materials, very precise coating techniques have been developed. Surfactants are screened as aids in the preparation of extremely uniform and very thin emulsion layers. ■

Inspect every foot before it leaves your plant with the HFC High Speed Heavy Duty Inspection Projectors -- 16mm & 35mm models now available.

NEW

The projector is a converted front shutter Simplex with a two pin intermittent 16mm or 35/32 film runs at a speed of 144 ft. per minute while 35mm film runs at a speed of 165 ft per minute

1. A variac controls the light intensity.
2. A 500 watt lamp is used for 16mm and a 1,000 watt for 35mm (a blower is used to cool the lamphouse).
3. A 2½ inch projection lens is furnished with each unit.
4. A start stop levar controls the power to the lamp and motor.
5. The magazine and take up core takes up to 3,000 ft of film
6. Upper guide rollers are made to handle the film from either direction of the feed reel
7. A free wheeling take off flange is provided in the magazine
8. A lamp near the takeup reel permits hand inspection of the film prior to takeup.

NOUVEAU

Le projecteur contient un obturateur Simplex anterieur transformé avec deux clavettas intermittent. Les films de 16mm ou 35/32 tournent avec une vitesse de 144 pieds à la minute, tandis que les films de 35mm tournent avec une vitesse de 165 pieds á la minute.

1. Le regulateur de voltage d'intensité d'eclairage
2. La lampe de 500 watt est nécessaire pour les films de 16mm, et de 1000 watt pour les films de 35mm (un ventilateur est mise pour rafraichir la chambre de la lampe).
3. L'objectif de 2½ est instalé.
4. La manette de mise en marche et d'arrat controle en meme temps la lampe et le moteur
5. La boite de films avec noyau paut contenir 3000 pieds du films.
6. La roue supérieure est construite de manière de recevoir le film dans les deux directions, nourrie par la bobine centrale.
7. Une roue est instalée pour libérer rapidement le film de la boite.
8. La lampe se trouva pres da la bobine recepteuse, et donne toute facilité pour Inspecter le film a main dans le projecteur.

NUOVO

Questi proiettori sono Simplex transformati, otturatore al fronte, meccanismo di scatto di due punte. La velocita di proiezione in 16 o 35/32mm e di 144 piedi per minuto, e in 35mm, di 165 piedi per minuto.

1. Controllo manuale della luminosità della lampada.
2. Lampada di 500 watt per 16mm e di 1000 watt per 35mm.
3. Obbiettivo di proiezione di 2½".
4. Maniglia per controllo di motora a lampeda di proiezione.
5. La cassetta porta pellicola puo contenare 3000 piedi.
6. I rulli superiori di guida sono construiti per operare con film provanante di ambi lati della bobina svolgitrice.
7. Disco con montatura sporgente nel magazzino.
8. Una lampadina illumina la bobina avvolgitrice, permettendo l'ispezione manuale del film prima che si avvolga nel proiettore.

NUEVO

Esta máquina es un proyector simplex convertido, obturador al frante y movimiento intermitente a doble grifa. Para 16mm o 35/32mm, la velocidad fija de proyaccion es de 144 pies por minuto, para 35mm es de 165 pies por minuto.

1. Un reostato controla la intansided de le lampara da proyección.
2. Para 16mm se usa una lampera de 500 watt, y une de 1000 watt para 35mm (un chorro de aire ventila los lámparas en ambos casos).
3. Cada unidad astá provista de un lante de proyección de 2 pulgadas y media.
4. Una palanca de control opera el motor y le lampera simultáneamente.
5. Capacidad de proyección· rollos de hasta 3000'.
6. Los rodillos de guia superiores oparan con la pellcula en ambas direcciones.
7. La tapa de la bobina de carga es desenroscable.
8. Una lámpera ubicada junto a la bobine de toma permite la inspacción manual de la pelicula antes que se rabobine en la bobina superior del proyector.

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A Variable-Beam Quartz-Iodine Photo Lamp

ColorTron's new Focusing Quartz Light features instant zooming from spot to flood, provides illumination ranging from 60,000 to 550,000 centerbeam candlepower.

THE NEW COLORTRAN Focusing Quartz Light utilizes a 1-K quartz-iodine illumination element positioned axially. By simple manual control, the element may be moved to vary the light beam from spot to flood or vice versa and may be set for any beam width in between

PROBABLY NO OTHER company has so thoroughly explored the potentials of the quartz-iodine (QI) light source as ColorTran Industries, whose ColorTran photo lights, operated on the boosted-voltage principle, have been so widely accepted in the motion picture industry.

In previous issues we have reported on some of the new QI photo lamps developed by ColorTran. This report covers the company's latest development in this field—a *focusing** quartz-iodine photo lamp certain to create considerable interest among cinematographers everywhere, and particularly in the production sphere of the film industry itself.

In less than two years, the diminutive quartz-iodine lamp has made tremendous forward strides. Today, studio lights with a quartz-iodine illuminant source are relatively permanent fixtures in many motion picture, industrial film and TV installations. A number of studios have even gone "all quartz".

The quartz-iodine lamp is small, compact, lightweight. It maintains a constant intensity and color temperature for the entire life of the lamp. And it is a highly efficient light source; reflectors and housings have been designed by ColorTran which permit a 1K quartz lamp to produce 5K's of light.

With all these advantages, however, two factors have prevented QI from fulfilling its full potential. So far, the maximum wattage of any commercially available quartz-iodine lamp is 1000. Until recently, no one had developed a true focusing light utilizing a quartz-iodine lamp unit as the light source.

A step in this direction was the Quartz-King "Dual" Light developed by ColorTran Industries early this year. The Dual permits finger-tip change to wide flood or medium flood in one single housing and produces smooth, even lighting of exceptional intensity and quality. Two models were developed, the Dual "650" which provides up to 3900 watts of photographic illumination from one head; and the Dual "1000", which provides up to 7600 watts of light from a single head. Both versions operate on 110/120

Continued on Next Page

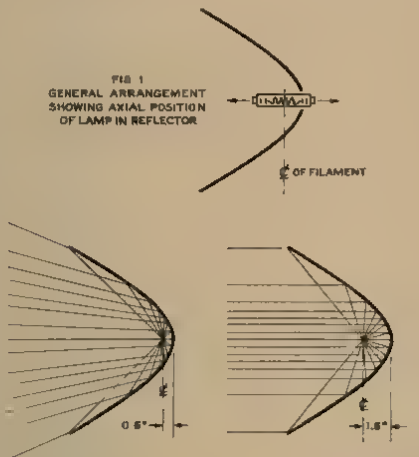

FIG 1
GENERAL ARRANGEMENT SHOWING AXIAL POSITION OF LAMP IN REFLECTOR

℄ OF FILAMENT

FIG 2
POSITION OF LAMP IN REFLECTOR FOR FULL FLOOD

FIG 3
POSITION OF LAMP IN REFLECTOR FOR FULL SPOT

NOTE FOCUSING PERMITS MOVEMENT OF LAMP BETWEEN POSITIONS IN FIGS 2 & 3 PROVIDING FULL RANGE OF PATTERN CONTROL FROM FLOOD TO SPOT

*Readers may question use of the term 'focusing" in trade-name of ColorTran's new light unit, and also in text of this report. However, the term, as it relates to set lighting units, has become part of the vernacular of electricians and other technicians of some motion picture and television studios, and is generally used to describe a set lamp whose light beam can be progressively varied—flooded out or narrowed to a spot.—EDITOR.

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But while the Quartz-King Duals are a great advance, they do not constitute true quartz focusing lights. In the Dual, the QI source must be repositioned manually inside the head to change from one focusing position to another, and the intensity ratio is only 2 to 1.

For these reasons, the new ColorTran Focusing Quartz Light (FQL) may be considered a development of major importance for the motion picture industry. It produces 2 K's of illumination with a 1 K lamp. In actual "side-by-side" tests, the light outperformed a standard studio focusing light using a 2-K lamp.

The development of the FQL came about through a radical break with standard focusing light principles long in use. A totally new structural system was developed that is completely unique in conception, operation and design. This is evident in the component features of the light. The housing is of a special shape, specifically designed to accommodate a short linear illumination source such as the QI lamp. The light's reflector has a dual finish, with a diffuse base and a specular outer rim. The lamp itself, instead of being used transversely in the reflector, is positioned axially. Light rays are therefore prevented from projecting directly toward the subject. There is no Fresnel lens in front of the housing—in fact, no lens at all. Instead, 85% of all radiant energy from the bulb is collected by the specially designed reflector and beamed toward the subject. Varying the light beam is achieved by moving the lamp axially inside the reflector a distance of only 1 inch, accomplished manually through a precise focusing-screw mechanism.

So radically different is the design of the FQL that it is the subject of a new patent application. In the testing laboratory, it produced a smaller spot and a wider flood with only one-half the power and a third the weight of conventional studio focusing light units.

Some idea of the light's range of performance may be seen in the following comparisons: A conventional focusing incandescent studio set lighting unit using a 2-K lamp has an included beam angle of 41.1° at maximum flood and produces 50,000 centerbeam candlepower. At spot position, it has an 8.6° included beam angle and produces 400,000 centerbeam candlepower. The FQL at maximum flood has an included beam angle of 36° and produces 60,000 centerbeam candlepower; at spot, it has an included beam angle of 5.7° and produces 550,000 centerbeam candlepower. (See diagram.) Admittedly this is remarkable performance for a photolamp having only a 1-K illuminant source.

The ColorTran Focusing Quartz Light is said to be the first set lighting unit to combine the constancy of quartz-iodine illumination and its high lumen output with a functional housing having an effective capability for varying light beam from spot to flood. In addition, there are the inherent advantages of the QI unit's constancy of light volume and color temperature, plus its ability to operate efficiently at low amperages on either DC or AC. Weighing but 12 pounds, the FQL weighs approximately 20 pounds less than a conventional 2-K focusing set lighting unit.

The Focusing Quartz Light can be used in conjunction with the Color Dyne 1-K Electronic Dimmer recently developed by ColorTran and described in a Product Report in our July issue. By mounting one of the dimmer units on the floor standard of a FQL, it is possible for the cinematographer or his gaffer to control both the beam width and the light intensity of the unit.

The ColorTran FQL will accept either 1000 or 650 watt quartz-iodine lamps. Switching from one size to the other is facilitated by an adapter designed for the purpose. Until recently, the standard unit for the light was either the 1000-watt or 650-watt QI lamp rated at 3400° K and having a life of 12 to 16 hours. More recently, ColorTran has introduced its new and exclusive line of "long life" 3200° K quartz-iodine lamps which may be

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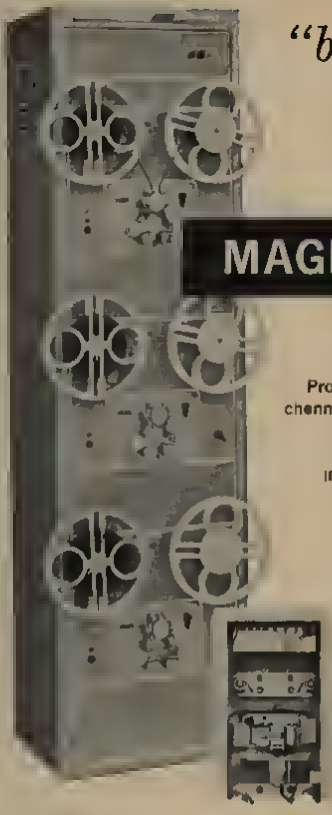

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Rear interior view of Selsyn motor electrical interlock

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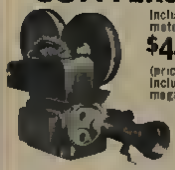

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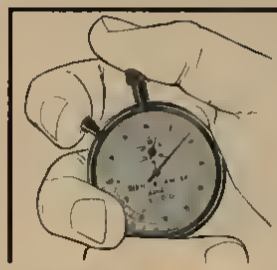
• SHORT SUBJECTS • TRAINING FILMS • NEWSREELS • INTERVIEWS •

Use of reflectors, diffusers, fill lights and the like were specifically taboo. We could not ask the dancers to face toward the sun. It was our problem if clouds or even rain occurred. Asking the dancers to repeat a spoiled scene was out of the question.

It was therefore mandatory for many reasons to keep the outlay of field equipment and crew as small as possible and to keep the operation exceedingly versatile and mobile. The number of Indians participating in a dance ranged from one to fifty or more. Dancing took place throughout the day and thus good photographic lighting was always "available," which ranged from blistering, high altitude sunshine (about 1½ miles above sea level) to overcast. Exposures had to be determined without benefit of close survey of the dancers. The gorgeous costumes presented every conceivable shade and saturation of color.

In addition to the technical reasons to minimize the bulk of apparatus, it was highly desirable to distract the performers as little as possible. None of them were in any sense professional



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dancers. They were the men, women and children of the pueblo who were performing a native rite—to them a function which ranks the same as a church service or a wedding to us.

One cameraman with an assistant had the sole responsibility of filming all the dancers. Needless to say they earned their money during the festival! They gave good account of some 2,200 feet of film during the two days. The photographer was Fred Patton, of Fred Patton and Associates, Santa Fe, New Mexico. His experience with Indians and a broad experience in outdoor photography proved invaluable. I briefed him prior to filming each dance, describing the mood and content of the dance and the kind of things we wanted to stress. As soon as the dancers arrived on the plaza I then left the photography to his judgement while I recorded sound on ¼" tape. He used a Bolex H16 Reflex camera and zoom lens for most of the shooting. A Bell & Howell Filmo camera—often hand held for action shoots—was also used. A few bird's-eye shots were made from atop a 16-foot stepladder.

A unique situation developed during one of the dances. It concerned the Cloud Dance, one form of the Rain Dance, and the meteorological phenomenon accompanying it. (I shall carefully refrain here from committing myself regarding "belief" in Indian Dances. Nevertheless, I deemed it prudent to commandeer my son's wagon in which to move the recorder, converter, etc., rapidly to shelter in the event of inclement weather.) The Cloud Dance was started before noon under a nearly cloudless sky. Before the dance had been in progress half an hour it was evident that clouds were forming for a local shower. During the intermission that followed the dance I asked cameraman Patton to shoot one of the billowing thunderheads in single frame exposures for use as a transition introducing the Eagle Dance. To our awe the clouds had ceased growing and were dissolving at an astonishing rate. Thus we had—not dramatic transition footage—but a photographic record of the build-up of clouds during the Cloud Dance and their subsequent dissolution.

There were more than technical problems associated with filming inside a kiva. Kivas are highly sacred to Indians (ordinarily entered by Indians only), embodying many of the attributes associated with white men's churches and lodge halls. Kivas are ordinarily circular structures, usually underground, with the only access a ladder through the roof. Soft illumination such as the light from an open fire is uniquely appropriate for the ritualistic activities conducted within these structures, but is hopelessly too faint for color cinematography. The glare of bright electric lamps truly destroys the subjective moods pertinent to the work, and is one of the reasons why the older Indians are so critical of attempts to photograph their services.

Filming in the Kiva

An agreement was reached whereby the filming would be done in the restored kiva at Puye, the ancestral home of Santa Clare and other modern pueblos of Northern New Mexico. Though this was a solution to the public relations problem, it created formidable technical difficulties. One big problem was the total absence of electricity necessary to power our lights—the nearest line being about ten miles away.

The only solution to the power problem appeared to be to rent a portable motor generator. I was distressed to find that the first such units that we tried were unacceptable because of poor voltage regulation. The voltage fell as low as 60 or 70 when the rated load lamps were applied. Finally a rental establishment in Alburqueque offered me a 3½ KW Onan outfit. It required four men to move it, but it worked! Even at full-rated load the voltage was a good steady 115.

Though the kiva was only about 20 feet in diameter, its stone and adobe walls and floor with dark ceiling acted like a sponge to soak up light. The entire 3½ KW provided only marginal illumination for shooting at f/1.5 to f/1.9. In fact most of the backgrounds turned out a little darker than desired. We were uncompromising on skin tones, however.

I don't wonder at the Indian's bewilderment at being asked to act naturally under the glare of lamps instead of the usual soft light. The cameraman had his problems too. Most of the important action took place near the center of the kiva. Often the cameraman found himself backed up against the wall in an effort to achieve adequate coverage even with a 10mm lens and needing more light so he could stop down for depth and at the same time needing the lights moved farther out of his angle of view.

It was evident during the first filming session in the kiva that Mr. Patton seemed rather preoccupied with thoughts of his own. He later confided that he had been so interested in the subject matter he was shooting he could scarcely keep his mind on the camera. I quite agreed with him that this was truly one of the highlights of a lifetime because what we were shooting had never before been witnessed by white men.

The cutting of sacred evergreen boughs is part-and-parcel of the proceedings of the kiva ceremony. Two able young men are selected and, as part of the ceremony, entrusted with a very ancient obsidian knife with which to cut the evergreen boughs. They are also given a portion of the sacred corn meal to be used in a ritual of thanks at the tree before any of the boughs are cut. The cutters are dispatched about midnight and required to make the trip to the sacred evergreen grove (at least 10 or 12 miles round trip) and return to the kiva as nearly as possible at the precise moment of sunrise.

Knowing of no means whereby color film could be shot in "available" night light, we asked the evergreen cutters to repeat the trip to the forest in daylight as I photographed them on indoor color film without corrective filters. The result was a fully acceptable facsimile of moonlight.

Sound

The necessity of keeping the field apparatus to the absolute minimum has already been explained. Thus no attempt was made to record sync sound. This was all the more desirable because much of the "meat" of the story was embodied in the symbols which needed voice-over explanation.

While the cameraman was filming the dances, John Ward and I were busy recording the drums and chants on ¼" magnetic tape. An Altec M-20 condenser microphone and an Ampex 600 recorder formed the core of the system. Inasmuch as there was no power available at the Puye ruins where the dances were performed, automobile batteries and a Carter motor-generator provided the required electricity. In keeping with the policy of minimum gear in the plaza where

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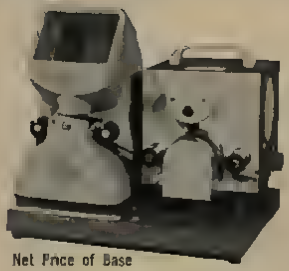

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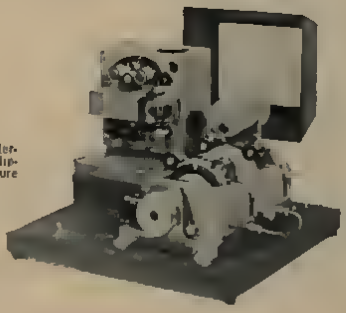

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the dancers were performing, about 60 or 70 feet of extension cords were used between the recorder and the microphone.

In the interest of realism I tried to place the microphone, which was carried on a 10 foot boom, to record the sound of the drums and chanters in the same perspective as heard by the dancers. Sometimes I brought the microphone up directly over the heads of the dancers which gave an agreeable pick-up of the sound from the little prayer bells worn by the dancers.

Special consideration was given to the microphone mount and shielding to deal with wind rumble and spectator chatter. Field recording has been one of my hobbies for several years and, through trial and error guided by common sense, I have evolved my own home-made microphone mount. It is my impression that the effectiveness of a "sock" is much greater when it encloses a considerable volume about the microphone. In fact I suspect that quantitative tests would indicate that the effectiveness is proportional to the volume enclosed by the "sock". But, on the other hand, field work argues strongly for small, unobtrusive and light weight apparatus. My compromise

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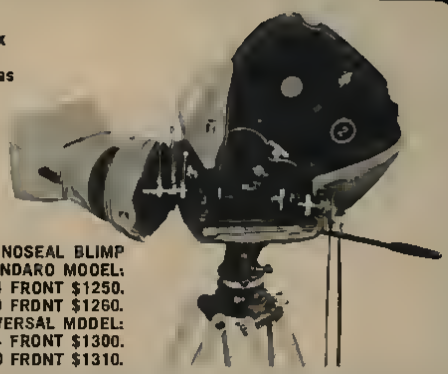

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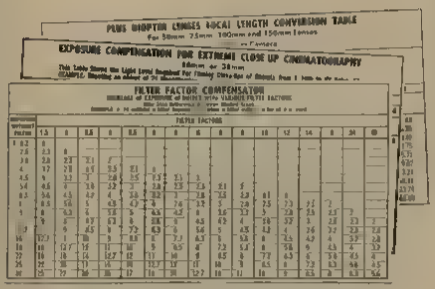
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was for a hemispherical framework of coat hanger wire about six inches in diameter over which silk was stretched and held by elastic. The flat back side of the hemisphere was padded with sound insulation which seemed to reduce pick up from the back. Even though this home-made shield may have been a little conspicuous, it worked—and worked well. The recording was completely free of wind and crowd noise and exhibited a pleasing "presence" quality.

It should be pointed out, too, that the ceremonial drums used by the Indians are very special instruments acoustically and mechanically. Their construction is a fine art which I shall not attempt to explain beyond mentioning that they often—maybe always—contain one or more pieces of precious stone that are ritualistically dedicated by the medicine man. When it becomes necessary to replace drum heads, the replacement is made one end at a time, extreme care being taken not to let the mineral substance fall out of the drum even for a moment.

The sound generated by a good ceremonial drum has an almost magical effect on one's sensory organs. It is strangely pleasant in a musical sense and in addition induces a distinct sensory response of a mechanical nature in the listener's chest cavity. Much of this "magic" quality was captured on the ¼-inch tape record but is largely lost on the optical track as played through ordinary sound projectors.

Editing

I undertook the editorial task with the bliss of complete ignorance, for I had had no experience with film editing or Magnasync operation. It was in the editorial work more than anywhere else that I came to realize the sage wisdom of the addage "There's many a slip twixt scene and screen!"

The acid test for me came after the work print was completed. Mr. Patton, my patient advisor and teacher, was so busy with other things that he could spare no time with me during the sound track and conforming work. Instead, he gave me a key to his studio and said, in effect, have at it. I did! My efforts would probably have appeared hilarious to a professional. To me, however, the experience was shades of a nightmare for I had to function as narrator, recordist and projectionist all in one. To get a recording of the master narration on ¼-inch tape, I

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tacked a very long leader on the work print so I could turn on the projector, which was located outside the sound room, and then rush back in. roll the recorder, assume my station where the picture could be seen and establish a reasonable breathing rhythm by the time it was necessary to start speaking

Timing was a difficult chore because no synchronous projector was available Actually, an ordinary Bell & Howell projector that ran about one per cent fast was used to project the work print for recording the master narration on ¼ inch tape The resulting tape was carefully edited, the flubs corrected, and cued to the work print. All the dances, chants and other effects, suitably cued with leader tape, were put on a second ¼-inch tape.

The one man dubbing operation came near being the death of me! I set up the projector and screen, two tape recorders mixers, Magnasync, and instantaneous playback gear all in one room With everything ready I would roll first the Magnasync, then the recorder carrying the narration and at the proper cue flip on the projector and dash back to the mixer and second recorder carrying the dance recordings, chants etc., all the while watching two VU meters, the picture on the screen and the leader titles on the "effects" tape as well as listening critically to the instantaneous playback. It worked out that I could usually run about five minues before the sync between the several machines became far enough out to notice However, it usually took several tries before I could get all four machines started in acceptable sync. (It's no wonder my family decided to take a vacation *without* me during this operation.)

When the 16mm magnetic track was finally completed in segments of five minutes or so in length it was a very simple matter to splice them together and accurately match the sound to the work print in an interlock editor.

The finished film may be less than a masterpiece of technical perfection On the other hand it has something to say and tells its story with that essential quality of appealing to one's deeper emotions I think we have succeeded reasonably well in dealing very intimately with highly sacred matters in such a manner that any audience from Columbus' time to the present could feel they had learned something through our efforts. ■

CAMERAS FOLLOW HORSES

Continued from Page 523

with 24-volt motors now replaced the spring-driven cameras, and the cameras, instead of being hand-held during shooting, were secured firmly on hi-hats mounted on the protective rails of the towers. The product we turned out now began to look real professional. The results apparently pleased the Stewards and racing association officials, because the same method—although somewhat refined and improved—is still in use today, not only at Hollywood Park but at most of the major tracks in the country.

Other Tracks Use System

Following Hollywood Park's initial success with Film Patrol in 1945, other major tracks investigated it and ultimately acquired the service. First was Bay Meadows then Golden Gate Fields, then Santa Anita and Del Mar—all in California. Although various companies serviced the tracks, the cameramen, laboratory personnel and projectionist usually traveled as a group from track to track.

Since Film Patrol was first established at Hollywood Park, other racing associations have adopted it Today, practically all racing meets in the United states—thoroughbred, harness, quarterhorse or combination meets—use it. Film Patrol is also in use at many overseas tracks, in Hong Kong, Mexico City, Aqua Caliente, Venezuela, and Canada In many states of the U S. it is an official requirement of track operation.

The Equipment

In recent years, Film Patrol's methods have been improved so that a track may be serviced by a crew of five or six technicians. As all of the major racing tracks are similar, physically, the positioning of cameras is usually the same for each track The camera towers are fifty feet in height—one for the "head-on" shots, one at the ⅞ ths pole for the stretch run; and another to record the start and finish of all races of one, 1 1/16, 1⅛, and 1¼ miles in length. A similar tower is located also at the ⅜ ths pole position for recording the start of such fractional-length races as 5, 5½, 6, 6½, and 7 furlongs. A no less important camera position is that on the grandstand roof, near the finish line, which covers each race in its entirety.

Each camera tower or position has a dual camera set-up composed of 16mm Auricons, with one camera carrying a 10-inch or 12-inch telephoto lens for distance shots, and the other a 3-inch or 1-inch lens for action occurring closer to the cameras.

Zoom lenses were not put into use on Film Patrol cameras until last year, after they were tested extensively and modified for the system. It is likely that zoom lenses will replace the lenses previously used. and that this will result in converting Film Patrol to single camera operation—that is one zoom lens equipped camera at each position, instead of the dual cameras previously used The zoom lenses, with a range of 25mm-to-250mm, will enable each operator to cover the entire field of action without the need of a camera cut This should greatly improve the product as well as save considerable film, even make possible doubling the camera set-ups Equally important is the speeding up of operations that will result by eliminating the editing and splicing of film that is required by the dual camera system. The zoom lens photographic coverage would require but four splices in the film to make it ready for complete projection.

Improvements have also been made in projection. The projectors have been modified to permit speeding up or slowing down the action, or to stop the film for single-frame study on the screen. The machines have also been modified to operate in reverse, and a

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Challenged But Never Overtaken

Film Patrol, now in its 18th year of continuous operation, has many times been challenged by various innovators offering such systems as remote-controlled cameras and closed-circuit TV. In most cases, the systems failed to meet the requirements of the tracks, perhaps because the human factor is still an essential one in any patrol system.

When I started as one of six cameramen operating the old spring-wound 16mm cameras for the Film Patrol system, I took the job as a temporary assignment. I have been at it ever since. I estimate that over a period of 18 years I have made motion pictures of 45,000 horse races, exposed over 4½ million feet of film. And believe it or not, despite all these years of close contact with owners, trainers and jockeys, I still can't pick a winner! ■

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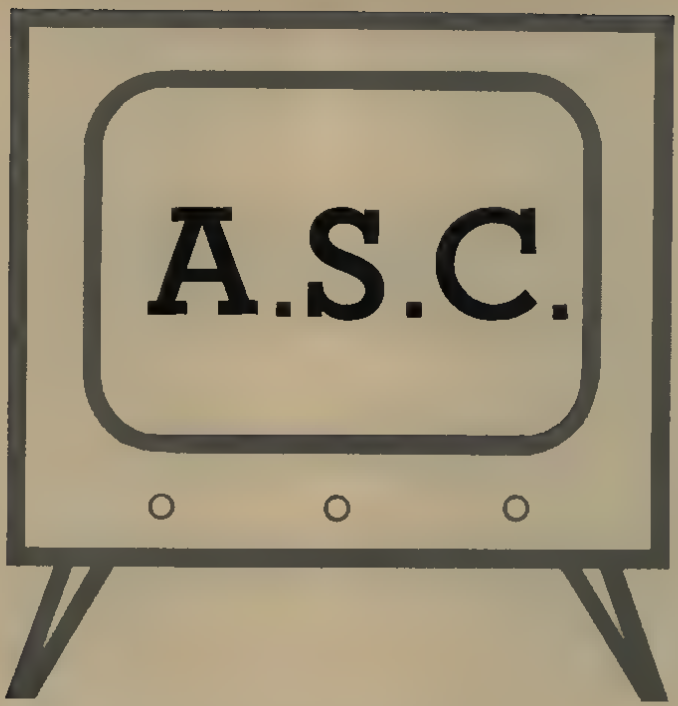

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BEHIND THE CAMERAS

Continued from Page 514

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EDWARD COLMAN, ASC, "Mary Poppins" (T'Color with Julie Andrew and Dick Van Dyke Robert Stevenson, director.

ROBERT HOFFMAN, "Temple Houston"*

ERNEST HALLER ASC, 'Dead Ringer" with Bette Davis and Karl Malden Paul Henreid, director

WILLIAM CLOTHIER, ASC, "A Distant Trumpet" (P'Vision, T'color, shooting in Flagstaff, Ariz.) with Troy Donahue and Suzanne Pleshette Raoul Walsh, director.

CHARLES LAWTON, ASC, "Ensign Pulver" (P'Vision Tcolor, shooting in Acapulco) with Robert Walker Jr and Millie Perkins Josh Logan, producer director

HARRY STRADLING ASC, "My Fair Lady" (Super P'Vision, 70 Technicolor) with Audrey Hepburn and Rex Harrison George Cukor, director

WARNER BROS.

ERNEST LASZLO, ASC, "Four for Texas" (Technicolor) with Frank Sinatra and Dean Martin, Robert Aldrich, producer director.

BURT GLENNON, " Sunset Strip"*.

UPDATING COMMERCIALS

Continued from Page 535

ciations. In other words, the same action appears in the commercials of 17 different associations with the identification of the individual association incorporated in its respective commercial.

Animation, Inc., has also produced a similar package of animated spot commercials for banks Their terse, punchy content is designed to sell a wide range of banking services from savings accounts to building loans, and they are presently in use by some fifty banks in different areas of the United States.

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for specific sales items. The idea is more applicable to the promotion of ideas, services or images. The commercials for the milk producers association described earlier is a good example. The producers are not interested in selling milk from farm 'A' as opposed to milk from farm 'B'. Instead, they want to persuade people to drink more milk and use more dairy products, thereby benefitting the whole industry.

"The situation with banks is somewhat similar. The advantages of banking are similar from market to market. This approach probably would not hold true, if, for example, you were selling a trademarked toy or tool.

"It is apparent then, that when buying animated commercials on film, the sponsor can purchase much more than the original spot. With careful planning, and consideration of the flexibility and timelessness of this medium, he can pre-pay much of his production costs for future commercials."

Other producers of animated commercials are finding success in this idea. Where the producer has access to the negatives, artwork or both which were used for the original commercial, producing a new revised version of the commercial is a simple matter.

Does this altering and updating of old commercials tend to affect the sale of new TV commercials that might otherwise be produced for the client? Not according to Earl Klein who claims it has helped rather than hindered his business. Sponsors are usually impressed with the innovation, and the additional "mileage" thus obtained with the commercial gives them additional experience in promoting sales or service by television, and this invariably leads to increased use of commercials, and the production of new ones. ■

AERIAL IMAGE TECHNIQUES

Continued from Page 525

then what?

A—Using other methods, there is a tendency to hit and miss on this type of operation. With aerial image we eliminate the possibility of error. The fact that we had a very important deadline to meet on this job made it mandatory that the first take be a success.

Q—Is the aerial image method faster?

A—Yes. The time saving accomplished with this system is about three-to-one. By this I mean the Kool Aid job took one day to make whereas it would normally take three days using the matte-high contrast method.

Q—Can you give me another aerial image case history?

A—Another rush job required animation to be superimposed over a waterfall scene. This project was for use in a Rheingold TV spot called "Summertime," produced by Paul Kim and Lew Gifford Productions, Inc. of New York City. The aerial image method was chosen again because of

SOME HISTORY ON AERIAL IMAGE

According to reliable sources, an 'underneath projection' unit was first developed and used to produce animated films by Max Fleisher in 1925, who published the first technical report on the innovation the same year.

The unit he used consisted of a projector mounted under a table whose center was an opening covered with translucent glass. A camera was suspended above the glass and a live-action image was projected onto the glass from below. A drawing on transparent material was then placed on the glass and the camera photographed both images simultaneously to produce a composite image on the negative.

In 1939, Paul Terry, famous later for his "Terrytoons", introduced and patented the first aerial image underneath projector. He installed a stop motion camera on an animation stand and mounted a hand-driven projector under the table top. It projected a live-action scene onto a reflecting prism that bent the image 90 degrees upward to two 19-inch condensing lenses mounted in the table top. Commercial equipment of this type became available comparatively recently when John Oxberry designed and introduced the aerial image projector described in Vern Palen's article beginning on page 524.

the speed factor. First, the rotoscoping was done and then the animation was completed and rendered.

Q—Was there anything unusual about this job?

A—Yes, when we were ready to combine the two scenes, we found that the original "stock shot" negative of the waterfall was unusable because it was scratched. This made it necessary to find another waterfall scene, which we did. But in this one the water flowed from left to right rather than from right to left. Normally, this would be a matter of great concern since all the animation was rendered to the original scratched live scene.

The solution here was easy with aerial image; we merely flopped the waterfall scene (Fig. 2) and repositioned it to the animation which had been rendered. We went through a dry run and made the necessary adjustments. Shooting was then done and the job completed in one day. Here, again, we were able to meet a very tight deadline which could have been disastrous when we discovered that the original waterfall scene footage was scratched.

Q—Why is matching so easy with aerial image?

A—With our Oxberry aerial image unit, we have a 11-inch picture which is the same size as the rendered animation. This makes it very easy to match or to make adjustments when necessary. This is an important consideration because animation scenes must be used economically. We cannot afford to remake animation scenes in order to make them match.

Q—Could this job be handled with matte methods?

A—By the matte method, it would be much more difficult and certainly not as accurate. In some cases, it might be necessary to remake and re-render the animation, which would take more time than we had budgeted for the job. Not only that, there would be much more expense, also. With aerial image, we can adjust the scene easily and clearly on the camera table to match the animation scenes.

Q—Can you give us an example of this live-scene adjusting technique?

A—Yes. We were doing a spot for Paul and Lew Giffon on GRP Antifreeze, which involved animation and live footage. An automobile motor was shown in the live scene with various shots covering such things as the radiator hose, under normal and collapsed

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conditions. We had 15 feet of film showing the running engine with a normal hose and 15 feet with a collapsed hose. We had similar film footage for many other parts of the engine. When we projected this live film, we found slight variations in the positioning of the scenes. In order to make the spot effective, it was important that there be no movement of the motor from scene to scene. By means of a simple adjustment of the Oxberry aerial image unit, precision registration of the scenes was made so that the rendered animation matched the live scenes perfectly.

Q—Were there any other effects that you produced for this film?

A—Yes. One involved live animation and normal effect animation. No scene in the picture was more than about ten frames long. It was quite a layout job which was simplified by aerial image. There was lettering which was animated in and out of the radiator cap, arrows pointing to the collapsing hose, popping on and off. There were scenes where the fan belt was distorted, and scenes where the words "cool", "cold" and "freeze" popped on and off.

Q—Did you use aerial image for this entire job?

A—Yes. And by means of it we were able to produce a negative of such even density that it could be printed on one light intensity level in the final contact printing. This was important because in normal lab printing, light changes cannot be made on scenes that are less than one foot in length. All the scenes in this 60-second spot ranged from 10 frames down to 3 frames in length except for the last scene, which was held as a product shot.

With aerial image, it is a simple matter to project any scene and make a tracing of it. Since we work with an 11-field, the scene is always large enough so we can do most anything we want with it. Anytime that a scene appears two or more times (such as with the motor) we can always match exactly to the tracing. This can be done by viewing it on the table top without having to peer through a finder or guess as to alignment. As a matter of fact, the producer can stand alongside the cameraman and verify every step in the process.

Q—One of your notable commercials was the one for Volkswagen. Can you tell something about producing it?

A—This was a very unusual job for Trinkaus, Aron & Wayman, Inc. of Norwalk, Connecticut. They had a design problem that involved the opening for a show titled "The Volkswagen Hour", which is showing in the northeast part of the U.S. They wanted to show a number of rings wiping on in different directions. There were eight rings which finally evolved into a solid white screen.

To facilitate shooting and save time, each ring was shot on a separate piece of high-contrast film. This gave us eight strips of film which were then combined on the Oxberry aerial image stand. The producer was not sure of the way this unusual design would appear on the screen. The rings were to be combined with other movements of white lines and circles to ultimately form the Volkswagen logo. We were able to edit on the aerial image stand and produce a work print in very short order so it could be run with the sound track.

Q—What were the final steps?

A—We were then able to make some small changes which were desirable and reshoot very quickly. The final result was a perfect interpretation of the producer's design. After shooting the components on separate pieces of film, the eight pieces were combined through multiple exposure on one piece of film. In this case, the aerial image stand served as an optical printer. This made the final shooting of the job quick and painless. Being able to do the entire job in our shop, and knowing that we could do it, made it possible for us to use several short cuts to save time.

Q—What about that job where the aerial image was used to correct an omission in a completed film?

A—This was an interesting problem involving a TV spot which was completed and accepted. The day before air time, it was discovered that the Good Housekeeping seal had been omitted from the end scene. Here again, it was a simple thing to get the photostated seal, run the fine grain of the spot through the Oxberry aerial image unit, and at the precise moment at the end of the spot the seal was positioned on the glass table top using overhead lighting. The fine grain was run through to the end and this put the seal on the last scene as desired. The whole process of establishing the seal on the film, including layout and running footage, took about an hour.

Q—Could this job be done by matte process?

A—Certainly. But it would be necessary to shoot the seal separately together with a matte. This footage would then have to go to the lab for developing. We would have to wait for its return, then the final combination print would be made on the optical bench. This would add at least a day to the time schedule. More and more aerial image sequences are being incorporated in the films we produce. The Oxberry aerial image stand, after accomplishing such sequences, is then employed as an optical printer. It handles optical effects such as dissolves, wipes, skip-framing, running forward and backward, in order to complete a spot.

Q—Are you employing the aerial image technique in making the commercial for Polaroid?

A—No. This project is for Paul Kim and Lew Gifford and is an animation job, although it does not involve paint and ink cels. The entire sequence is being done by animating the Polaroid camera itself (Fig. 3). There will be two spots—one 20 second and one 60 second. Actually, the camera components are manipulated on the animation stand to coincide with a sound track. The cover opens, the bellows extend, the shutter cocks, the shutter release button is depressed, the camera turns about, the three developing operations are executed, the paper moves out of the camera, and the picture peels off. This is very effective animation to emphasize the simplicity of the Polaroid process. Obviously, this job does not require the technique advantages of the aerial image unit, but the final spot will be optically completed on the aerial image stand. ■

PANAVISION

Continued from Page 532

500 foot film magazines. The camera is powered by a 28-volt motor energized by a compact nickel-cadmium battery enclosed within the housing. When fully charged, this battery is capable of driving the camera at a sustained speed to expose up to six 500-foot magazines of film. As the accompanying photos show, the streamlined contour of the underwater housing is as attractive as it is practical.

Panflex Camera Updated

Panavision's Panaflex camera, described at length in our earlier report

has since been updated in a number of ways so that it may be adapted to sound stage use as well as serving as a portable, hand held reflex camera. When mounted on a tripod, with a regular studio finder added to permit follow-focus and parallax adjustments, the Panaflex easily meets the needs for studio production work. And when the need arises for a camera having instant and unlimited mobility, it may be dismounted from the tripod, the studio finder removed, and a shoulder-pod attached—making it possible for the operator to carry the camera to and work in difficult terrain, or to make hand-held shots from a moving vehicle or aircraft. The Panaflex utilizes the mirror-reflex principle, so that the operator views the scene through the taking lens as it is being photographed.

The camera features an extremely steady, precision-engineered dual pin film register movement. Another interesting feature is the internal temperature control which insures efficient operation of the Panaflex in cold weather and Arctic climes. Miniature heating elements, thermostatically controlled, are mounted within the camera at strategic points to insure normal operating temperature inside the camera regardless of the weather outside. Completely automatic in function, this heating system permits a Panaflex camera to be ready for use in cold weather within three minutes after the current is turned on. There is no need to run the camera for a lengthy warm-up period before loading and threading the film.

Panavision Lenses

Panavision has made many notable advances in the design of its lenses for 65/70mm film production. The newer lenses are smaller and faster than earlier models and are available in a range of focal lengths from a new extreme wide-angle to 400mm telephotos. Greatly improved definition and acuteness are claimed for them.

The company's line of anamorphic lenses for 35mm wide-screen photography has also undergone many changes. The improved lenses are said to be considerably sharper in resolving power, and distortion has been reduced "practically to the point of extinction," according to Panavision's engineers. An extremely high speed f/1.0 lens has been produced especially for use in night photography with color film in available light.

Panavision is now turning out zoom lenses for 65mm photography. These are electrically operated and quite silent in operation. The motor-driven zoom movement is electronically controlled so that it can be operated either very rapidly or very slowly—so slowly in fact that watching the results on the screen one finds the change barely perceptible. Electrically-driven zoom lenses in a variety of focal-length ranges for 35mm photography are also available.

So widespread has become the use of Panavision lenses in the motion picture industry that the company has adapted them for use with the popular Arriflex cameras. Or perhaps we should say that Panavision has provided an adaption for the Arriflex camera whereby it can utilize a special Panavision lens system. This comprises three prime lenses, each of different focal length, plus an anamorphic lens that focuses all three lenses for wide-screen photography. Being very light and compact, the system was designed primarily for use with Arriflex cameras operated hand-held, outdoors.

Camera Motors

Camera motors have received considerable study at Panavision and one important recent result is a new concept of wild motor for motion picture cameras whose speed is electronically rather than mechanically governed, and is said to operate quietly and steadily at any speed within the practical requirements of film production. It is said to be more powerful than other wild motors and is reversible—two attributes which make it ideally suited to a wide range of film production requirements. Its power potential is particularly important, Panavision points

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out, in that it provides a dependable camera drive for filming in cold weather. The motor fits both Mitchell and Panavision cameras and may be operated indefinitely without overheating. While this motor is not synchronous, speed regulation is so precise that cameras equipped with it may be used for lip-sync sound filming, according to Panavision. So-called wild motors are notoriously noisy, but this Panavision achievement promises new stature and a wider scope of use for wild motors in motion picture production.

Panavision also has in production a new multi-duty camera motor. Although no larger than conventional camera motors, this motor is said to be more powerful than any designed so far for the purpose. Conventional multi-duty motors were never designed to operate steadily for long periods of time because of the tendency to overheat. While the new Panavision concept may heat up when run steadily for long periods, company engineers say danger of damage from overheating is negligible.

When shooting in the field without the convenience of a dependable power source, film production can be a real headache. And the inconveniences are hardly lessened where one must bring along a power generator or a heavy load of batteries.

Panatron Power Converter

Panavision has come up with a real solution to this problem with its Panatron power converter, which delivers 96 volts of DC current from a 12-volt DC source. Designed primarily as a power supply for sound recording, it offers for the first time a dependable means of driving both camera and sound recorder from a 12-volt battery.

In a typical sync sound set-up, the converter's 12-volt output is fed to the camera operated by a multi-duty motor, with one leg of the camera's electrical system connected to the recorder. The camera motor, operating on the converter generated 96-volts of current, becomes, in effect, a 220-volt AC synchronous motor-generator. Current generated by the camera motor is fed to the sound recorder which is powered by a 220-volt synchronous motor, driving it precisely in sync with the camera.

Although Panavision supplies a 12-volt battery as a companion unit and power source for the Panatron, any 12-volt automobile battery may be used for the purpose. Operating on a single battery charge, the Panatron will operate a camera to expose up to 6,000 feet of film—adequate for an average day's shooting. Also supplied is a compact battery charger and a miniature gas-driven generator for the charger.

Widespread Use

Many of Panavision's new developments have been utilized, some for the first time, in such recent productions as "It's a Mad, Mad, Mad, Mad World," "The Greatest Story Ever Told," "The Fall of the Roman Empire," "Becket," "My Fair Lady," and the Dino di Laurentiis marathon version of "The Bible."

"Each time a new picture is started that is to be photographed with Panavision equipment, we make available to the producer our very latest developments in equipment," explains Robert Gottschalk, President and founder of Panavision, Inc. "We then work closely with the director, the director of photography and the technical staff as the equipment is tested in actual production. If any changes or further improvements are necessary, we make them immediately.

"Because we lease our equipment rather than sell it," Gottschalk further explained, "we do not have to compete in a price market, we can afford to use the very finest of materials and workmanship to guard against equipment failures in production."

Panavision's 70mm studio cameras undergo constant updating and improvement. After the completion of a production, cameras leased by Panavision are returned to the factory in Los Angeles where they are completely disassembled, overhauled and rebuilt—at which time any new innovations developed by the company are incorporated. The studio cameras feature Panavision's new camera movement and a 200° shutter. The latter greatly reduces cross screen strobing effect when the camera is panned. It also permits shooting at a somewhat smaller f/ stop.

The Panavision camera movement is also unique in the relationship of the pull down claw to the movement of the register pins, thus preventing the film "picking" noise which occurs frequently when film that has shrunk is used.

Established only ten years ago, the comparatively small Panavision organization has all but dominated the wide-

Continued on Page 558

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Continued on Next Page

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Continued from Preceding Page

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PANAVISION

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Continued from Page 510

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